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USSR Report

NATIONAL ECONOMY

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AGRO-ECONOMICS, POLICY, ORGANIZATION

GOSBANK OFFICIAL ON NEED TO IMPROVE APK CREDIT RELATIONS

Moscow SELSKAYA ZHIZN in Russian 28 Sep 86 p 2

[Article by V. Dementsev, chairman of the board of Gosbank USSR: "A Ruble on Credit"]

[Text] All of our radical reforms are doomed to failure if we fail to succeed in our financial policies. In supporting this instruction of V. I. Lenin, the 27th CPSU Congress required fundamental changes to the content, organization and methods of operation of financial and credit organizations. "Their most important task is not petty regulation of the activities of the enterprises," underscored a policy report of the CPSU Central Committee, "but economic stimulation, strengthening of monetary turnover and cost accounting which is the very best controller."

In recent years the role of credit and its effectiveness in influencing savings at the enterprises and organizations of the agro-industrial complex (APK) have weakened. The financial credit mechanism has not prompted progressive change in the APK, has not led to improved economic accountability and the guarantee of self-sufficiency and self-financing. To a great extent, credit is being used to cover various types of gaps caused by incompetence, lack of thriftiness and other shortcomings. This has led to a situation in which the growth rate of credit investments has outstripped the growth rate in the volume of production.

The strength of a ruble of credit is often decreased by non-productive expenditures, ineffective disposition of derived income and irregularities in the use of capital.

At a number of farms the growth rate in wages exceeds that of productivity. Such situations can often be seen on unprofitable and low-earning farms.

Many breaches are tolerated even in the use of in-house circulating capital. There are farms where capital is generally lacking. There are serious deficiencies in the economic and financial planning for kolkhoz and sovkhoz activities. In 1986 many farms were late in formulating their plans and prepared them poorly, neglecting to account for mobilization of inter-economic resources and failed to balance profits and expenses. This interrupts normal credit accounting computations.

Organizational and economic measures adopted recently by the party and the state permit all APK enterprises to work profitably and to have timely accounting of their obligations. Conditions have been created for a more complete and unified order of credit. The CPSU Central Committee and USSR Council of Minister's decree on "Further Improvement in the Economic Mechanism for Businesslike Management in the Country's Agro-Industrial Complex" determined that credit for kolkhozes, sovkhozes and other enterprises and organizations that are part of the USSR state agro-industrial system is being realized by the conservation and rational utilization of internal assets and timely return of credit received.

The USSR Gosbank is currently implementing a credit accounting service for more than 120,000 agro-industrial complex enterprises and organizations, which includes 26,000 kolkhozes and 22,500 sovkhozes. In the beginning of 1986, credit investments in branches of the agro-industrial complex amounted to 250 billion rubles, or more than 61 percent of all national economic investments. USSR Gosbank credit for kolkhozes and sovkhozes accounts for 60-70 percent of all current assets, and 80 percent in the food branches of the industry. Thirty percent of capital investments are being implemented on the kolkhozes.

The efforts of the country's state bank workers are now aimed at promoting the creation of an economic mechanism for businesslike management in the APK which will hasten the transfer of kolkhozes, sovkhozes and other agro-industrial enterprises to full cost accounting.

With this aim, the relationships of APK farms and enterprises with state bank institutions are being built based on the economic stimulation of industry, the further strengthening of cost accounting principles and the transfer of industries to self-financing and self-sufficiency.

Emphasis is now put on the guarantee of the enterprises and organizations to use necessary funds in strict compliance with the basic principles of credit. This is one of the trends in improving credit policy. Another concerns the credit mechanism itself, the order of planning, and the distribution and return of loans.

Over the course of recent five-year plans the credit mechanism consistently became more complicated and more unwieldy and ineffective. There was a multitude of the types of credit. Currently their number has been significantly lowered.

We now have basic changes and simplification of earlier complicated, clumsy credit planning and a drastic enlargement of credit objectives. This has permitted a decrease in bookkeeping and other types of documentation. At present the credit plan is being composed on the whole for the agro-industrial complex. In planning we are proceeding so that the needs of the enterprises for loans are satisfied in economically justified amounts and so that they are more closely correlated with agricultural production volumes.

A unified order of credit for the kolkhozes, sovkhozes, inter-farm and other agro-industrial enterprises has been developed taking into account the

combined norms of in-house circulating capital and without distribution according to the types of credit.

Failed innovations are being eliminated. We now find automation in the credit process, a multitude of objectives and norms, closer ties in the movement of in-house capital and loans and a marked decrease in the number of documents presented by the enterprises to the state bank. There is a heightened role for current accounting of an enterprise. Its functional scope has expanded. Now all receipts derived by a farm from the sale of produce are entered into this account. This gives the enterprise the opportunity to disseminate in-house assets at its own discretion and to direct them to those production branches where there will be greater yield from invested funds. This changeover to a unified credit process for agricultural enterprises allows for a significant simplification of its entire system and makes it more accessible and understandable to state agro-industrial farms and organizations.

The differentiated order of credit and accounting has been examined. There are major advantages for enterprises guaranteeing efficient use of capital and timely return of loans. The rights of local state bank institutions are being expanded in terms of credit exemptions for farms that have suffered from natural disasters and unfavorable weather conditions. State bank institutions can make loan payment postponements available to enterprises experiencing temporary financial difficulties for a period of up to six months. But this is done with specific measures for return of the money and with a guarantee from higher authorities.

Several kolkhozes, due to minimal savings, are not in a position to accumulate in-house circulating capital up to the established norm. In the 20th Five-Year Plan they will be credited with factually available in-house circulating capital and planned supplements. This is also a specific exemption. And this will be especially effective if local state agro-industrial organs and banking institutions take such farms under special control, allow them to correctly distribute profits, mobilize internal reserves and strengthen their savings programs.

The new approach also examines how farms which systematically fail to fulfill plans, tolerate non-productive expenses, losses and violations of financial discipline and fail to pay back loans on time are switching over to an especially strict credit system. However, if an enterprise adopts decisive concrete measures to eliminate discrepancies in their industrial and financial activities, the state bank can quickly cease the break and restore credit.

Rights have been expanded in managing short-term and long-term credit. For example, a needy regional agro-industrial association can switch a portion of its unused limits from one enterprise to another without turning to superior authorities. Improved planning, more flexible credit management, especially at lower levels, allows for operationally satisfying supplemental, economically substantiated needs for capital that arise at agro-industrial complex associations, enterprises and organizations in the course of carrying out industrial and financial plans.

The current credit policy has already yielded specific results. In the first six months of this year loans granted to kolkhozes and sovkhozes led to increased sales of basic types of products to the state.

Loans to processing enterprises are getting special attention. Essentially, banking methods foster in them more complete use of their industrial potential, allow for wider introduction of the achievements of science and technology and reduce product losses in all stages of production, storage and processing.

The role of the credit mechanism is being strengthened in putting cost accounting and self-financing into practice, in influencing safeguards for the enterprises' current assets and timely accounting for all types of obligations, as well as in eliminating above-the-plan reserves of goods and materials costs. The task is to see that credit not turn into a source to cover losses and not to use it for poor quality production or as a means for product demand.

If an enterprise accepts credit in order to resupply raw materials, as a rule, a preferential loan is issued that has no limits and is independent of accounts for earlier issued loans. This is a condition for timely sales of produce.

We all know that mutually overdue debts between state agro-industrial enterprises are systematically on the rise. The state bank is introducing a new procedure to settle mutual indebtedness accounts for kolkhozes, sovkhozes and other state agro-industrial enterprises and organizations by granting credit to them for a 90-day period. This state bank means of compensation went into effect in June of this year. It provides an opportunity to significantly improve the financial status of many farms. It is important that the enterprises return the loans issued as compensation on time.

The USSR Gosbank has taken over servicing for the USSR Bank for Financing Capital Investments of 9,500 enterprises and organizations with the overall limit for capital investments and construction-installation work of 9.4 billion rubles. Bank control over capital construction has strengthened. For example, this year projects were not financed where allocated funds were insufficient to carry out the construction in the prescribed period. According to the USSR State Agro-Industrial Committee, this includes 9,300 projects.

In drawing up capital construction plans, state bank enterprises must have well-substantiated proposals for concentrating assets on start-up and transitory projects, on reducing the number of newly begun work projects and on decreasing the amount of incomplete construction. In the course of financing and making long-term loans for capital construction, we must primarily strive to direct funds towards technical re-equipping and modernization of existing enterprises and improving technological processes.

Analysis shows that there are many deficiencies and unresolved problems in agro-industrial complex capital construction. One-third of the agricultural projects that are erected violate the construction period.

Many agro-industrial complex enterprises and organizations fail to make timely and complete contributions intended for financing capital investments. For instance, in the first half of this year only 95.8 percent of in-house capital contributions were made, resulting in a financing shortfall of 370 million rubles. Due to this there arose delays in accounts for completed work and in delivery of machinery and equipment.

The USSR Gosbank not only finances but also extends long-term loans for realization of planned capital investments. This credit is granted, stemming from the principle of its full use and return within an established period. The list of measures by which farms are granted long-term credits is now unified. Loans are given primarily for modernization and technical re-equipping of operational industrial buildings and facilities, stock breeding complexes and farms.

Construction financing procedures now are uncomplicated. There has been a fourfold decrease in the number of documents presented for this purpose.

We have taken the first steps in restructuring our work. Our cause must be to see that the needs and limits of banking credit always depend on economically substantiated requirements for an expanded resurgence in production.

8504

CSO: 1824/20

AGRO-ECONOMICS, POLICY, ORGANIZATION

NEW ECONOMIC EXPERIMENT SET IN MOSCOW OBLAST COMBINES

Moscow SOVETSKAYA ROSSIYA in Russian 15 Jul 86 p 2

[Interview with V. S. Zakharov, chairman of the agroprom committee in Moscow Oblast, by Yu. Shakutin, SOVETSKAYA ROSSIYA correspondent: "Agroprom Firms"; date and place not specified]

[Text] A large-scale economic experiment has begun in the agroprom of Moscow Oblast. Following the example of the Kuban Firm in Krasnodar Kray, in accordance with the decrees of the USSR Council of Ministers and the RSFSR Council of Ministers, three combines are being established in the oblast: in Ramenskiy and Kashirskiy rayons and Moskva in Lyuberetskiy Rayon. Two of them are already operating and the third--Moskva--is in the formation stage.

Our correspondent Yu. Shakutin met with V. S. Zakharov, chairman of the agroprom committee in Moscow Oblast, and asked him to discuss the purpose for which the combines were established and the tasks set for them.

* * *

The establishment of large agricultural combines is the continuation of the search for the most improved forms of organizations of agricultural production and the processing industry. As is well known, RAPO are to be fully responsible for the production of agricultural products and their processing. In accordance with the functions entrusted to them, kolkhozes, sovkhozes, and processing enterprises form part of them. Combines represent another stage in the accomplishment of this task. They are obliged not only to produce products and to process them, but also to sell them in finished form through a network of their own firm stores, consumer cooperatives, and state trade. Their fundamental and, I would say, qualitative difference from present rayon agro-industrial associations lies in this. The tasks set for us also become complicated accordingly. To deliver improved-quality products, I stress, products, not output, in a diverse assortment to the people's table is the main one.

What does this mean? Combines will have to resolutely abandon the current slogan "from the field to the counter." Vegetables, fruits, and other products will first arrive at sorting or processing enterprises, from where

they should be sent to stores in cleaned and prepacked form, or maybe as semifinished products. Nonstandard products, in turn, will be processed into juices and canned products and waste will be sent to farms. In essence, waste-free production is organized in such a way. Dairy and meat products will be sold in precisely the same way in finished form after appropriate processing.

It is important to note that the right to set prices of products delivered to trade is given to combines. However, these should be high-quality products of the most diverse assortment, including delicatessen. Market prices are to be affected in such a way.

Naturally, newly established combines will require specific capital investments for the reconstruction of presently existing processing enterprises and the construction of new ones, especially those that will have to engage in the sorting, weighing out, and packing of products. Naturally, this imposes great responsibility on them, primarily for the quality of products, their assortment, and prompt delivery to local stores and to the trade network. It will be necessary to engage not only in production, but also in trade. This will still have to be learned, personnel will have to be trained, and relations will have to be established. It will be necessary to expand or newly build storage facilities and refrigerators and to establish new enterprises for intensified processing of field and farm products. In brief, highly organized agricultural enterprises of a totally new type with a closed--from the production of products to their sale--cycle are being established.

This is what the Ramenskiy Combine will represent. Its administrative machinery has been formed on the basis of the former RAPO. It as such is being abolished. All enterprises, services, kolkhozes, and sovkhoses form part of the combine. It is assumed that by 1990 Ramenskiy will produce and sell, for the most part in ready form, 77,500 tons of milk, 24,000 tons of meat, 120,000 tons of vegetables, and 57,000 tons of potatoes. A total of 140 types of vegetable products alone will be produced. Direct relations with the capital's Pervomayskiy Rayon have been established. A number of firm stores are being opened here. About 100 million rubles of capital investments for the reconstruction of existing and construction of new processing enterprises, for strengthening the material base of kolkhozes and sovkhoses, and for the social structure have been allocated for the combine for this five-year plan. It is expected that expenditures will more than repay for themselves. By the end of the five-year plan the combine will receive about 40 million rubles of profit and the profitability level will comprise 33.5 percent.

The Kashirskiy Combine has also been established according to the same principle. Its difference lies in the fact that, apart from milk, meat, and vegetables, it is also specialized in the production of fruits and berries. The Moskva Combine looks somewhat differently. In addition to enterprises and farms in Lyuberetskiy Rayon it will include the Moskovskiy Hothouse Combine in Leninskiy Rayon and the Yuzhnyy Sovkhoz-Combine in Stavropol Kray with its powerful hothouse facilities for the production of early vegetables. Thus, the capital will be able to receive various green products almost all year round. The combine will establish extensive relations with the country's

southern regions and on the basis of cooperation will supply Moscow with grapes, citrus and other fruits, and berries.

As already noted, virtually all enterprises, kolkhozes, and sovkhoses form part of these combines. Will they retain their independence? Will it be profitable for them to carry on management? Will they be able to carry out social reorganization? The independence of enterprises is retained. The combine undertakes the functions of a strategic order, that is, planning, material supply, and a number of others. From specific deductions it will create centralized funds for different purposes. It is assumed to have within the framework of the combine financial accounting centers, as is done in the Kuban Firm. The combine will deal with the State Bank and all inside settlements will be made through its financial service. As existing experience confirms, this will greatly simplify and regulate financial relations among partners.

Such are, in general outline, the tasks set by the agroproc, establishing new powerful agricultural combines. Two forms of management, that is, rayon agro-industrial associations in their new capacity and agro-industrial combines, will exist in the oblast.

11439

CSO: 1824/437

LIVESTOCK AND FEED PROCUREMENT

UDC 631.115.92

EFFECTIVE HOG BREEDING IN INTER-FARM ENTERPRISES DISCUSSED

Moscow SVINOVODSTVO in Russian No 5, Sep-Oct 85 pp 16-18

[Article by V. Goremykin, Candidate of Economic Sciences at the All-Union Scientific Research Institute of Agricultural Economics: "Raising the Effectiveness of Pork Production"/

[Text] The concentration of pork production in inter-farm formations is for all practical purposes predetermining the status and economics of swine husbandry in the zone of their activities. This is borne out, for example, by the operational experience of the Shirvint Kolkhoz in the Lithuanian SSR, which is carrying out the function of an inter-farm enterprise engaged in the reproduction and fattening of hogs. Each year the kolkhoz produces more than 3,000 tons of pork, the average daily increase in hog weight during fattening is more than 600 grams and the profitability level for the branch exceeds 50 percent. In the public sector in Shirvintskiy Rayon, the proportion of pork produced on the basis of cooperation is approximately 80 and for the amount sold to the state by kolkhozes participating in cooperation -- 90 percent. As a result and compared to the period prior to cooperation, over a period of 10 years the production of pork in the public sector increased by twofold and for a number of cooperating farms -- by a factor of 2.8, with growth in the number of animals by factors of 1.6 and 2.1 respectively; the labor expenditures per quintal of increase in live weight declined by almost threefold and feed consumption per unit of product decreased by 25 percent. During this period, the profit from swine husbandry for kolkhozes participating in cooperation increased by almost threefold.

By means of internal reproduction, a kolkhoz not only satisfies its own requirements for young pigs but in addition it annually sells 6,000-7,000 head to the population and this actively promotes an increase in meat production at all categories of farms in the zone of their activities. Successful work is also being performed by many other inter-farm formations in the reproduction, raising and fattening of hogs.

At the same time, by no means is full use being made of the opportunities available in a number of areas for carrying out inter-farm cooperation and production costs continue to remain high. Successful work by inter-farm formations in swine husbandry is associated with a complex of diverse conditions and factors which can be combined into four large groups, which are closely related in terms of interaction and conditionality: organizational, technological, economic and social.

Improvements in the effectiveness of swine husbandry operations at inter-farm enterprises are based upon improvements being realized in the production technology, in raising the intensity of use of accumulated potential and particularly in the productivity of the animals. Analysis and computations reveal that an increase in the average daily weight increases in hogs during fattening from 200 to 600 grams is accompanied by a reduction in feed consumption by a factor of 2.5 and a decline in the proportion of maintenance ration by a factor of 2.8. For each 100 grams of increase in the average daily gain in live weight, the production cost per quintal of pork declines by 20-25 percent, depending upon the hog productivity level, including the amortization of fixed capital by 20-50 percent (see Table 1).

TABLE 1

(1) Показатели	(2) Среднесуточный прирост (г)				
	200	300	400	500	600
(3) Живая масса 1 головы при реализации (кг)	100	100	100	100	100
(4) Продолжительность производственного цикла (дн.)	495	330	248	198	165
(5) Расход на 1 кг прироста живой массы (корм. ед.)	10	8.5	7.0	5.5	4.0
(6) в том числе поддерживающего корма (%)	70	59	47	36	25
(7) Прямые затраты труда на 1 ц прироста (ч)	10.6	6.4	4.8	3.9	3.2
(8) Производство свинины из 1000 корм. ед. (кг)	100	118	143	181	250
(9) Себестоимость 1 ц прироста свинины при стоимости 1 корм. ед. 1.5 руб. (руб.)	250	211	175	137	100

Key:

- | | |
|---|---|
| 1. Indicators | 6. Including maintenance ration (%) |
| 2. Average daily weight increase, in grams | 7. Direct labor expenditures per quintal of weight increase (hours) |
| 3. Live weight of 1 head at time of sale, in kilograms | 8. Pork production from 1,000 feed units (kilograms) |
| 4. Duration of production cycle, in days | 9. Production cost per quintal of increase in pork at a cost of 1.5 rubles for 1 feed unit (rubles) |
| 5. Consumption per kilogram of increase in live weight (feed units) | |

This regularity is clearly apparent in the practical development of swine husbandry. Thus, groupings of complexes in the nonchernozem zone of the RSFSR confirm the fact that with an increase in the average daily weight gains in hogs during raising and fattening from 149 to 514 grams, the feed consumption per quintal of increase in live weight decreases by a factor of 2.3, production costs -- by a factor of 1.6 and labor expenditures -- by a factor of 6.

For the profitable carrying out of swine husbandry operations on a cooperative basis, importance is attached to further improving the existing types of enterprises and associations. The trend that has been noted towards the reorganization of inter-farm enterprises -- transferring them over to the balances of kolkhozes and sovkhoses -- and the conversion over from specialized to multiple-branch production operations, as is taking place in some rayons in Kursk Oblast, is not solving the problems concerned with raising the economic effectiveness of swine husbandry in the absence of an appropriate change in the structure of the areas under crops on such farms. Production associations, based upon the use of a leading enterprise, are still not being employed extensively in swine husbandry, despite the fact that it is known that they are

the most improved and promising organizational forms for inter-farm cooperation and agro-industrial integration. Experience reveals that production associations which are presently active in swine husbandry are already achieving a new and further increase in labor productivity and growth in production profitability. Thus, at the swine husbandry Omskiy Bekon Association, which in the meat balance annually supplies more than 80 percent of the overall volume of pork being produced in the oblast, more than 60 kopecks of profit are being obtained for each ruble invested in the branch. At the Novyy Svet Association, which produces more than 50 percent of the pork in the public sector in Leningrad Oblast, the labor expenditures for 1 quintal of increase in live weight do not exceed 4.8 hours, feed consumption -- 560 feed units and the profitability level -- 36 percent

An objective regularity with regard to development reveals that with growth in the productive forces in agriculture, the organization of specialized production of swine husbandry products on a cooperative basis will undergo further expansion and intensification. Thus work concerned with the creation of inter-farm formations in swine husbandry must not be halted, especially in those regions of the country where their relative density is light. In the future, in a majority of the country's economic regions, practically all of the young hogs intended for slaughtering for meat purposes can be raised and fattened on specialized farms which operate on a cooperative basis. As revealed by experience accumulated in Krasnodar Kray and in Voronezh, Belgorod and other oblasts in the RSFSR, they can produce up to 90-100 percent of the marketable pork.

An indispensable organizational-economic condition for efficient operations by inter-farm enterprises is an increase in the level of their specialization and consistent development of the branch and technological forms of this specialization.

Computations reveal that the concentration of commodity swine husbandry operations at specialized farms throughout the country will make it possible to save annually more than 500 million rubles and 2 million tons of feed units and conditionally to release approximately 40,000 individuals for other work. Thus considerable importance is attached, on swine breeding farms, to subordinating the structure of the areas under crops to more complete support for the branch in terms of feed. The bread grain and technical crops grown on these farms must be exchanged on an equivalent basis for mixed feed, that is, field crop husbandry must be concentrated mainly for the production of feed and other products of intra-farm importance. Positive experience has been accumulated in Belgorod Oblast, where within a system of 19 specialized swine breeding farms, which furnish more than 75 percent of the pork in the public sector, the structure of the area under crops has been regulated, the sowings for the more productive crops have been expanded and a base has been created for storing feed and for preparing complete ration mixtures. As a result, more than 40,000 tons of grain forage were replaced by other components, pork production increased by 7,500 tons during a year's time and 107,000 more head of young pigs were obtained. In swine husbandry, labor productivity at inter-farm formations is higher by a factor of 2-4 than it is at sovkhozes and kolkhozes throughout the oblast.

However, the production structure for swine husbandry is excessively complicated as a result of planning a broad range of marketable types of field crop husbandry products. This is restraining the development of internal feed production and it is bringing about a deterioration in the conditions for developing the principal branch. The land allocated for feed production is at times being used in an unsound manner for the growing of various marketable agricultural crops and this is complicating the structure of the swine husbandry specialized farms.

An important factor with regard to raising the effectiveness of swine husbandry operations is that of developing optimum organizational-production structures and parameters for the inter-farm formations in conformity with the zonal conditions and their approval and introduction into operational practice. A summary of the experience of leading farms and computations reveals that high effectiveness by a formation in the raising and fattening of hogs is achieved based upon parameters for various types of specialized swine breeding enterprises, as shown in Table 2.

TABLE 2

Показатели (1)	(2) Тип свиного комплекса				
	репродукция поросят (3)	доращивание и откорм (4)	полный цикл производства свинины (5)		
			1	2	3
(6) Мощность комплекса (тыс. гол. в год)	12,0	24,0	6,0	12,0	24,0
(7) Площадь сельскохозяйственной (тыс. га)	—	5—6	8—10	3—5	6—10
(8) в т. ч. пашни	—	4,2—5,4	6—8	2,5—4	5—8
(9) Годовой объем производства:					
(10) прироста живой массы (тыс. т)	0,35	2,0	0,72	1,3	2,9
(11) поросят (тыс. гол.)	12,9	—	7,6	14,0	28,0
(12) валовой продукции (млн. руб.)	1,2	3,3	1,3	2,5	4,7
(13) среднегодовая численность работников (чел.)	60	120	115	130	219
(14) уровень специализации (%)	100	100	65—75	95—85	80—90
(15) производство кормов на 1 га сельскохозяйственной (и корм. ед.)	—	35—47	25—40	32—45	20—45
(16) Поступление кормов	По ко- операции (17)	Собст- венное (18)	Собст- венное	Собст- венное	Собст- венное

Key:

- | | |
|---|---|
| 1. Indicators | 10. Increase in live weight (thousands of tons) |
| 2. Type of swine complex | 11. Young pigs (thousands of head) |
| 3. Reproduction of young pigs | 12. Gross output (millions of rubles) |
| 4. Maturing and fattening | 13. Average annual number of workers (persons) |
| 5. Complete pork production cycle | 14. Level of specialization (%) |
| 6. Capability of complex (thousands of head annually) | 15. Feed production per hectare of agricultural land (quintals of feed units) |
| 7. Agricultural land area (thousands of hectares) | 16. Feed source |
| 8. Including arable land | 17. By means of cooperation |
| 9. Annual production volume: | 18. Internally produced |

The intensification of swine husbandry operations will make it possible not only to increase meat production but also to lower the expenditures required for obtaining it. The material expenditures for 1 ruble worth of gross output in swine husbandry can be lowered to 0.55-0.85 rubles and the output yield per average annual worker raised to 20,000-25,000 rubles.

The effective functioning of inter-farm formations in swine husbandry is also dependent to a considerable degree upon the accepted system for maintaining economic relationships with those participating in cooperation, which must correspond to the principles for material interest by cooperating collectives, that is, based upon mutual advantage for all farms engaged in the creation of joint pork production operations.

At the present time, the mutual accounts between participants in cooperation in the majority of instances are being carried out based upon accounting prices which include a portion of the profit, which is not singled out separately and which fully applies to the cost of the young stock and feed being delivered. This leads to an artificial inflating of the production cost for the live weight of cattle sold and to a reduction in the profitability level for pork production at inter-farm enterprises. At the same time, a calculation of the profit from inter-farm activities at participating farms, in the absence of a link with a specific type of product, tends to understate the profitability of the cooperating branch. Therefore the advance portion of the profit should ideally be singled out in the accounting prices and it should be taken into account accordingly in the bookkeeping system at kolkhozes and sovkhoses. This amount should not be included in the production cost for the final product obtained at an inter-farm enterprise. This method will make it possible to reveal the true effectiveness not only of individual technological stages in the production of pork but also of the entire branch, as it functions under the conditions of inter-farm cooperation.

The organizational-economic factors for highly effective functioning by inter-farm formations that have been examined herein, similar to all other conditions, are placed in operation by labor collectives. Thus a further strengthening of socialist labor discipline and improvements in organization and order at each working position are indispensable conditions for increasing the production of high quality pork.

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FOOD PROCESSING, DISTRIBUTION

BETTER USE OF SECONDARY MILK PRODUCTS DEMONSTRATED

Moscow MOLOCHNAYA PROMYSHLENNOST in Russian No 6, Jun 86 pp 6-9

[Article by Yu.S. Shilnikov and G.S. Minakova, engineers, Department for the Production and Processing of the Products of Animal Husbandry of USSR Gosagroprom: "Basic Directions of Thorough Use of Raw Materials"]

[Text] Among the most urgent and priority tasks set by the 27th CPSU Congress is realization of the country's Food Program. Today the efforts of every work collective in the sector must be aimed at intensification of production and at acceleration of scientific-technical progress in order to achieve an increase in the output of high-quality dairy products with resource-conserving technologies on the basis of thorough and integrated processing of milk. In the light of these tasks optimum utilization of all milk's components takes on particular importance.

In the years of the 11th Five-Year Plan industrial processing of skimmed milk and buttermilk increased 30 percent, while that of whey doubled, while the increase in the amount of them available was 18 and 23 percent, respectively.

This achievement was made possible by activation of plants for the production of dried products from secondary raw materials with a capacity of 400 tons per shift. During the 5-year periods 57 plants and shops were built for SOM [dried skimmed milk], ZTsM, and dried whey. At the same time interfarm shops for ZTsM were equipped on the basis of cooperation between enterprises of the dairy industry and kolkhozes and sovkhozes.

This resulted in an increase in the production of dairy products and animal feed for livestock raising made from secondary raw materials. To be specific, 260,200 tons of dried skimmed milk were produced in 1985, or twice as much as in 1980; 271,600 tons of ZTsM (an increase of 40 percent); 7,900 tons of dried whey, i.e., 4.4-fold more; and 22,700 tons of raw and refined lactose (for an increase of 39 percent).

In 1985, 1,918,000 tons of natural whey, or 1.6-fold more, were sold to the enterprises of the food industry and Tsentrosoyuz to be used in making bread and rolls and confectionery products. This made it possible to increase the annual saving on flour up to 76,000 tons.

Last year 2.6 million tons of enriched whey soured with lactobacilli as well as more than 1 million tons of liquid ZTsM, which is equivalent to 91,000 tons of dry substitutes, were delivered to meet the needs of animal husbandry.

At the same time, if we critically evaluate the state of affairs from the standpoint of the 27th CPSU Congress, we have to acknowledge that the effort made in the sector toward more thorough and integrated processing and toward optimum utilization of milk resources still does not meet present-day requirements. Capacity utilization is insufficient at a number of enterprises. In 1985 there was a large shortfall of dried products for that reason.

About half of the resources of secondary raw materials (see the table) go for industrial processing, and only 35 percent of the skimmed milk and buttermilk and 29 percent of the whey go for food purposes.

USSR and Union Re- publics	Skimmed Milk and Buttermilk		Whey	
	Processed in In- dustry, thou- sands of tons	Percent- age of Resources	Processed in In- dustry, thou- sands of tons	Percent- age of Resources
USSR	19,905	49.5	6,456	51
RSFSR	10,250	54	3,720	55
UkSSR	3,959	44	1,274	50
BSSR	1,315	45	413	53
UzSSR	138	33	39	45
KaSSR	802	51	151	37
GSSR	42	84	109	80
AzSSR	80	67	32	23
LiSSR	568	33	110	23
MSSR	449	67	106	45
LaSSR	504	45	152	39
KiSSR	227	71	46	59
TaSSR	86	49	17	40
ArSSR	35	59	127	65
TuSSR	16	14	6	35
ESSR	452	61	75	34

At the same time a number of enterprises in the Baltic and the Transcaucasian republics and RSFSR have raised the level of processing of secondary dairy products to 95-100 percent by introducing technologies for integrated use of the raw material.

A decree on this subject issued by the CPSU Central Committee and USSR Council of Ministers set the task of bringing the industrial processing of skimmed milk and buttermilk to manufacture dairy products for food and ZTsM up to 65 percent of the resources of industry and that of whey up to 60 percent.

These targets, although strenuous for the country as a whole, should be regarded as minimal.

The targets in the 12th Five-Year Plan are as follows for processing skimmed milk and buttermilk and for the production of the principal products from this raw material (in thousands of tons):

<u>Indicator</u>	<u>1985 (re- ported)</u>	<u>1990 (draft plan)</u>	<u>1990/1985, %</u>
Amount of skimmed milk and buttermilk available	40,222.0	43,400	108
For processing	19,906.0	28,200	142
Percentage of initial amount	49.5	65	
Output of products:			
Defatted dairy products converted to skimmed milk	2,258.0	3,500	155
Dried SOM and ZTsM	531.8	968	1.8-fold
Liquid ZTsM	1,055.0	1,500	142
Defatted cheese and brynza	80.1	95	119
Casein	30.5	36	118

Above all maximum use has to be made of the secondary raw material for manufacturing low-fat and defatted dairy products balanced in their nutritional value and enriched with vitamins, milk-protein components, and fruit and berry fillers; solid rennet cheeses with 20- and 30-percent fat contents; low-fat ice cream, etc. Today the output of defatted products on a per capita basis is 13 kg per year. However, this level is far higher in a number of republics: 87 kg in LaSSR, 54 in ESSR, 28 in MSSR, and 25 kg in BSSR.

More than 75 percent of total skimmed milk resources, as is well known, are produced in making butter. A significant indicator of industrial butter processing is the yield of SOM and ZTsM per ton of that product. In 1985 this figure was 822 kg in MSSR, 820 kg in ESSR, while the average for the country as a whole was only 352 kg. The results are especially low in the dairy industry of UkSSR, KaSSR, LiSSR, and LaSSR and in most regions of RSFSR; to some extent the reason for this is the shortage of production capacities, but it equally occurs because of the poor initiative and insufficient enterprise on the part of the branch's specialists and managers.

The draft plan for the twelfth 5-year planning period calls for reinforcing the plant and equipment for processing skimmed milk. Plans call for activating capacity of 725 tons per shift to produce SOM, ZTsM, and dried whey through the organization of shops and retooling and construction of plants predominantly with a capacity of 2.5-7 tons per shift. In areas which have a relatively good road network and a sufficient degree of concentration of milk production on kolkhozes and sovkhozes there are plans to build SOM (ZTsM) plants with a capacity of 12-14 tons per shift. The reference here is to a number of oblasts in RSFSR, UkSSR, BSSR, LiSSR, and ESSR.

The planned activation of capacity is still insufficient to cover the required growth of production of SOM and ZTsM.

There is a sizable potential in setting up seasonal SOM shops in association with existing milk processing plants on an interfarm basis; they would be designed from lightweight fabrications to operate 3-4 months a year. This means organizing with the utmost speed the series production of the SO-500 dryer, which has been developed in UkSSR, is not difficult to manufacture, has a high productivity and is small in size, and it is manufactured there at machine repair plants. During the 4 summer months a dryer like this can process 500 tons of high-quality granulated SOM. The cost of the seasonal shop is approximately 300,000 rubles (whereas a permanent standard plant costs 1.5 million rubles). Two hundred seasonal shops make it possible to process an additional 1 million tons of skimmed milk per year (out of the 4 million tons which are superfluously fed to livestock in the summertime), yielding 80,000 tons of SOM. It also must be taken into account that the granulated product, as shown by the experience of the Ukraine, does not cake up when stored for a long time like the ordinary product, but it has the same solubility as the product obtained by spray drying.

A quite significant potential lies in reequipping casein-making on the basis of the inexpensive Soviet line Ya9-OKL, which is not difficult to make and produces raw casein by the continuous method, yielding a product that is mainly in the superior grade; it increases by 40 percent its throughput in existing dryers and triples labor productivity. When this equipment is used, in the summertime it is possible to organize the processing of surpluses of skimmed milk in the country's out-of-the-way areas where it is difficult to set up energy-intensive operations to produce SOM or ZTsM. One hundred such lines in existing shops alone would add more than 10,000 tons of high-quality casein per year, and this is a product that is in great demand on the world market.

In regions where there is not enough skimmed milk, new types of ZTsM should be mastered in order to increase the production of animal feed by making up for a portion of its whey with soybean flour and fodder yeasts as well as plant protein--green protein concentrates obtained from the juice of grass.

One of the untapped resources is to disseminate the experience of enterprises where the processing of secondary raw materials has been organized effectively. At the Belgorod Milk Processing Combine, for example, the following dried products have been developed and introduced: the protein-carbohydrate concentrate "Belgorodskiy," reconstituted milk to feed farm animals "Belgorodskoye," and also the beverage "Lechebnyy [Therapeutic]," and the sour-milk beverage Befidin. Industrial processing of skimmed milk and buttermilk in that combine has been increased to 95 percent, and that of whey almost to 100 percent.

Particular attention needs to be paid to the use of such a valuable product as buttermilk for nutritional purposes. Some 15 percent of it is still returned by inspectors and said to be fed to livestock, while this percentage is 52 percent in LaSSR, 68 percent in TaSSR, 91 percent in TuSSR, and 93 percent in UzSSR. The institutes of the branch have developed a broad assortment of products made from buttermilk. Maximum use should be made of it to adjust milk to standards with respect to fat content, for the production of cream cheese, and for making beverages (the sour-milk beverages "Uglichskiy," "Vita," "Leto" with various fillers, etc.), which have won the approval of customers.

The optimum use of buttermilk surpluses is drying it, which has been organized at a number of enterprises. In 1985 the Mazheykyay, Telshyay, and Utena plants in LiSSR produced more than 1,000 tons of dried buttermilk and used it in the production of process cheeses and reconstituted milk.

Industry obtains more than 12 million tons of whey in making dairy products, including about 6 million tons of cheese whey, 5 million tons of cream cheese whey, and about 1 million tons of casein whey. It contains 570,000 tons of milk sugar and 114,000 tons of whey proteins, which are extremely necessary to the production of many baby foods, medicinal preparations, and a wide assortment of dairy, food, and confectionery products. During the 12th Five-Year Plan the processing of whey and the production of the principal products from it are to be increased to the following amounts (thousands of tons):

<u>Indicator</u>	<u>1985 (re- ported)</u>	<u>1990 (draft plan)</u>	<u>1990/1985, %</u>
Amount of milk whey available	12,653.00	14,900	118
Sent for processing	6,456.00	8,940	138
Percentage of initial amount	51.00	60	
Output of products:			
Raw and refined milk sugar	24.00	35	146
Dried whey	7.93	40	5-fold
Condensed whey	21.50	65	3-fold
Enriched whey	2,603.00	3,100	119
Sent for breadbaking	1,918.00	2,300	120

Membrane methods must become the basis for thorough and integrated processing of milk whey. Liquid and dry concentrates of whey proteins and protein-carbohydrate bases, which are later used in the production of dried dairy products for babies, ice cream, and process cheese, are produced using ultrafiltration.

The profit from production of 1 ton of concentrated whey protein obtained by ultrafiltration of cheese whey is 340 rubles; the filtrate goes to make milk sugar, and thus a practically waste-free technological process is created in cheesemaking.

A new technology is also being developed which makes it possible to increase the yield of milk sugar (the method of spray drying) 1.5-1.7-fold, to reduce the length of the production cycle by one-third, to reduce inputs of labor by 35-40 percent, and to achieve a benefit of about 300 rubles per ton of output.

Use of the wet protein concentrate obtained by ultrafiltration of whey from cream cheese to make whole-milk products saves as much as 100 kg of milk per ton. Moreover, this substantially improves the biological value of the product thanks to the use of whey protein.

The drying of whey is an important direction. In a number of the country's regions constructive experience has been gained in this. It has been organized on a broad scale in Bashkir ASSR, where in 1985 1,850 tons of dried whey, or 71 percent of its output in RSFSR, were produced. At the Dubno Cheesemaking

Combine in Roven Oblast they have begun to produce granulated dried whey with the SG-500 dryers we have mentioned. The Tsesvayne Cheesemaking Plant in LaSSR processes practically all the whey it obtains into dried whey. In 1985 it produced 1,430 tons and consequently earned a profit of 190,000 rubles. At the Payde, Pylva, and Saaremaa Dairy Product Combines in ESSR they make full use of capacity by organizing the drying of whey in the off season, when it is hauled in from other enterprises. But this experience has still not been disseminated as it should have been in the branch, and only 1.2 percent of the available whey goes for drying.

It is also possible to organize large-scale production of new products from whey: SMP (dried milk product) and Belakt, which are made by adding 30 percent skimmed milk. This technology has been mastered at the Khoyniki Cheesemaking Combine in Gomei Oblast. There they have set up a section to produce a new feed product Provilact (with a capacity of 2,000 tons per year), which is obtained by biosynthesis of whey whereby lactose is processed to make protein. Experiments have shown that as much as 50 percent of the dried skimmed milk can be replaced by Provilact in making ZTsM and reconstituted milk. The production of this product needs to be organized at enterprises which have a large amount of whey available. Processing 1 million tons of it will yield about 50,000 tons of Provilact and will make a corresponding amount of dried skimmed milk available for feed purposes.

Progressive collectives have had results worthy of attention in the processing of whey. For example, in the Tbilisi Production Association new products have been developed and put into production: the cheese "Svezhiy" with a fat content of 30 percent, the albumin cream cheese "Nadugi," small albumin cream cheeses with citrus fillers, the cheese product "Gelati," and the cheese "Tbilisuri" using albumin and defatted cream cheese and brine cheeses, whey-egg concentrate from condensed whey and bulk egg, the fruit-chocolate-lipid paste "Tsisartkel" using condensed whey, lard, tangerine syrup, and powdered cocoa, the khachapurnaya product "Chvistari," whose ingredients include corn meal, brine cheese, defatted cream cheese, and whey-egg concentrate. The problems in processing whey have been altogether solved in the association.

Expansion of the production of beverages from whey, the broad range of which has been created by the branch's scientists and verified in production, will make it possible to meet the demand of the population more fully. We might name some of them such as Okroshka whey, the kvass "Novyy," and the flavored beverages "Mayskiy," "Izmeshniy," "Osobyy," "Stepnoy," "Aromatizirovanny," and others.

The introduction of intensive technological processes affording thorough and integrated processing of milk requires a fundamentally new approach to this problem. It is indispensable that the specialists of the dairy industry study from every angle the experience of the progressive collectives and the advances of Soviet science and direct their efforts toward their universal and widespread dissemination.

Seeking out the untapped potential that lies in thorough and integrated processing of the raw materials from animal husbandry, optimum use of all their

components, especially secondary resources, elimination of losses of raw material and finished product in all stages of the production process from the livestock-raising farm to the consumer constitute one of the urgent tasks of collectives and specialists of the dairy industry in the country's agroindustrial complex.

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ELECTRIC POWER GENERATION

MOSCOW TV LINK-UP ON WINTER HEATING SHORTAGES

LD111133 [Editorial Report] Moscow Television Service in Russian at 1355 GMT on 9 November transmits a 60-minute program entitled "A Talk to the Point" in which political observer Viktor Beketov conducts a link-up from Moscow on preparations for winter in Donetsk, Voronezh, Tashkent, and Moscow. In the Moscow TV studio is Vasilii Georgiyevich Khrkov, deputy chairman of the USSR People's Control Committee; Yuriy Kuzmich Semenov, deputy chairman of the USSR Council of Ministers' bureau for the fuel and energy complex; Aleksandr Petrovich Fisun, first deputy USSR minister of the coal industry; Valeriy Nikolayevich Butko, USSR deputy minister of railways; Dmitriy Fedorevich Protzenko, member of the collegium and head of Glavenergo of the USSR Ministry of Power and Electrification; and Vyacheslav Ivanovich Chernoivanov, deputy chairman of the USSR Gosagroprom.

Beketov starts by saying that many letters have been received complaining of the cold: it is cold in the apartments because the heating has not been turned on on time; it is cold in livestock wintering quarters on farms; there are many complaints of passenger trains being cold. Beketov says he fears that with winter coming on the stream of such complaints will increase. He says the USSR People's Control Committee has carried out a number of spot checks in various parts of the country on preparedness for winter.

Vasilii Khortov then gives the results of the spot checks by people's control committees in various parts of the country, showing that while overall the preparations are all right, there are instances of certain factories not being ready, railway sidings not being prepared, etc. He recalls that in 1985 government and party leaders had to hold a phone-in concerning the poor work of railway sidings in the Donbass.

We recently checked the work of the Kuybyshev railway, Khorkov continues. And it must be said straightaway that most regrettably the Kuybushev railway management has not learned the lessons from last winter. Preparations of the line organization and snow-clearing equipment is particularly lagging behind, and still worse, in order to conceal its bad work it is resorting to window-dressing. They just say it's been overhauled when really it has not been overhauled. That's very bad.

Reporting by TV link-up from Donetsk, correspondent Gennadiy Kondauray, says that here, too, not everyone has learned the lessons of the severe winter of 1984-85. In the Donetsk studio Valentin Ilyushenko, general director of Donetskugol association, says miners of the association have worked well this year and have dug near 1 million tons of coal above plan and are setting themselves higher targets for the winter, taking into account the government's request to increase the output of coal. But the unsteady work of the railwaymen is demoralizing to the miners. Kondauray speaks of enormous quantities of coal building up at the mines of the Donbass. Aleksandr Alekandrovich Bulvanda, director of the Azovstal metallurgical combine, says he also has a complaint to make of the railways: they are not supplying enough flatcars for transporting the track manufactured by Azovstal for the railways.

Butko says both the coalminers and Azovstal manufacturers have been overfulfilling the plan, hence the difficulty the railways have been having in keeping up with supplies of rolling stock, but they will try to put matters right. At the same time, however, Butko continues, I would like to say that raising this question with so many manufacturing plants was the right thing to do. There is a problem here, he says, although there are few such plants left where this problem arises...but I also have a request to make of the plant directors: they must carry out the loading of rail cars properly, and--which is the main thing--they must not exceed the standard waiting time of railcars at the plant. I don't find it pleasant to make critical remarks during our conversation today, but Azovstal has been expanding the standard waiting time of cars by more than 30 minutes. So, let's make a sort of mutual agreement, he continues. I pledge to make sure that the trucks are despatched fully and in good time from the plant, and you--the plant director--please put your transportation department in order with regard to the utilization of the rolling stock so that the standard times are not exceeded. Azovstal director Bulvanda agrees to this.

Donetsk correspondent Gennadiy Kondauray interests to say: I would like to inform you about meeting. In order to make up for the power shortage presently being felt in the Donbass and in the Ukraine in a study, in particular in enterprises of the coal industry and the metallurgical industry, the power engineers have adopted a plan to put the third set of the Zuyevka power station into operation ahead of schedule. The capacity of the set is 300,000 kilowatts [kw]. If it was working during the fourth quarter, this power would be sufficient for a major metallurgical works such as Azovstal. However, he continues, while setting very strict ceilings for electrical power for enterprises, which these are unfortunately not keeping to, the power engineers themselves are not fulfilling their pledges, and the set has so far not been put into operation. What do the participants in our link-up have to say about this?

Donetskugol General Director Ilyushenko replies: We have extracted almost 1 million metric tons of coal above plan already, and have expanded an extra 59 million kilowatt-hours [kwh] of electricity. Is this good or bad? Let's sort this out. If we look at the unit consumption

norms, then we have saved 1 kwh per metric ton. That doesn't seem bad, and we are handling this type of power in a thrifty way. But now, he says, the question arises in connection with exceeding the ceilings: Do we need to extract above-plan metric tons? Let's look at a fairly simple calculation. That million metric tons of coal, in terms of standard fuel, and taking into account that 330 grams of such fuel is needed to produce 1 kwh of electricity, means that because of above-plan output alone we have provided for production of electricity amounting to 2,000 million kwh. Such an amount, he continues, would be enough to cover our own requirements fully, as well as the needs of an association such as Makeyvugol. That is only on account of above-plan extraction. And against the background of this over-consumption of 59 million kwh, because of which all kinds of sanctions are imposed upon us, and which the power ministry threatens, with the blessing of Gosplan, to make harsher in the winter period, I think that nevertheless we have more than made up for, by a factor of 400, with our above-plan extraction, if you translate it into electrical power. So that cannot be bad, and there is probably no sense in applying such harsh sanctions on the coalminers, up to and including switching off installations at mines, as is promised for us in the winter.

Beketov then recalls a recent IZVESTIYA article on how power is wasted at Donbass mines: It gave quite specific examples, he says, which are in accordance with reality, I think. What is more, I would like to say that at enterprises in general, no norms have been worked out for electricity consumption. In essence, nobody is responsible for over-consumption and nobody is applauded for saving it. And annual planning is done on the basis of previous performance, that is, next year is planned as consumption for the current year with a bit added. I think this is fundamentally incorrect, because the year's consumption includes all the instances of wasteful electricity consumption. They are, so to speak, legitimizing wasteful consumption, because what is needed are very strict, rigid norms.

Clavenergo chief Protsenko then says: Listen, Donetsk and Donetsk oblast are a concentrated form of all the problems now facing the country in the fall-winter maximum load period. But what I would like to say to the general director of the Donetskugol association is: Let me name your front-ranking mines, the Abakumov mine, the Kuybyshev mine, the Butovskaya Donetskaya, and the Gazeta Sotsialisticheskoy Donbass mine. These collectives, you see, have clearly understood their task, and the contribution from these collectives to our measures is 4,000 kw [figure as heard] that they have provided for the national fund, capacity that the country needs so much. But what is happening in your association as a whole, apart from these mines? According to figures for 22 days of October, he goes on, when you had already received the decisions of the appropriate bodies of local Soviet power--these exist in Donetsk, I could get a copy, and you are obliged to do this--in 22 days of October you allowed an 8-fold excess over the ceilings for power consumption--not by comparison with the task set, but even over what there was before. That is, you are on the contrary not contributing to the fund in the

association as a whole, but taking from it. That is, the Abakumov, the Kuybyshev, Butovskaya Donetskaya, and the Sotissalistichestskiy Donbass mines are contributing, while all the rest are taking from this fund, and taking power from your neighbors. Now, Protsenko says, we will look carefully to see that those who have not made a suitable contribution will be restricted, and will not live at their neighbors' expense. I think that this is the right stand.

Beketov then invites Fisun, first deputy minister of the coal industry, to give his opinion. Fisun says he thinks there has been insufficient coordination between the ministries concerned; the power workers wanted the above-plan coal, but not to increase consumption ceilings for the miners. Things must be better worked out for 1987, Fisun continues, when miners intend to produce more than 9 million tons of coal above plan. We have made a modest contribution, he says. We have saved a total of 230 million kwh of electricity through organizational and technical measures, but there are bigger reserves. In a year we expend only about 30 percent of electrical power from the overall consumption ceiling on extracting coal, and 70 percent is taken by fixed facilities. These are the main consumers, he says. This is an untouched area for savings. This means reducing losses of air in ventilation. Just think, Valentin Grigoryevich, in Donbass alone, in your association, we feed 10 metric tons of air into a mine each day to extract 1 metric ton of coal. What a colossal expenditure of electrical power! But if we get rid of the above-norm losses, Fisun continues, get rid of all the air leaks, what a saving that would be. Leading mining collectives have organized work to pump out water at night when power is available, Fisun says. He then speaks in general terms about the miners' duty to make sure people get the heat and light they need.

Beketov then asks Semenov, deputy chairman of the USSR Council of Ministers' bureau for the fuel and energy complex, to speak. Semenov says: The unfavorable climatic conditions that, as we all know, we have had in Central Asia and along the Volga, with a shortage of water in the reservoirs and the loss of capacities because of the shutdown of the Chernobyl AES, have made preparations tight for the winter. And there are now three regions--Ukraine, Central Asia, and the Transcaucasus--where electricity supplies will be very troublesome this coming winter. Of course, you know about this, and now, at such a serious conference, comes the question of give us more, and why do we not get extra allocations for electrical power? This is probably not the right question, because the plans have been endorsed, and the plan must be fulfilled.

Beketov then turns to the Voronezh studio for a discussion about preparations for the winter in rural areas. In the Voronezh studio, Ivan Antonovich Vinogradov, chairman of the Voronezh oblast agro-industrial committee, says teams have been formed everywhere in the spring to overhaul boilerhouses, heating networks, and electricity generating systems. But, he says, the onset of the first cold weather revealed substantial shortcomings in the preparations for winter. And in a number of rayons there was a drop in livestock productivity, with interruptions to the

heating supply for production and residential buildings. In the course of a year, he continues, it is estimated that there are more than 1,500 stoppages of the electricity supply, causing enormous losses.

Beketov notes that rural consumers make frequent complaints about the poor standard of power supplies compared with the service to towns. He asks Protsenko to comment. Protsenko agrees that service has been poor, and says: This year, the ministry has made a sharp change in its attitude to taking over the running of transmission lines from kolkhozes and sovkhozes, and we are now in complete accord with the Agroprom concerning this. The fact is that in taking such a politically important step as taking over all the (?non-farm and farm) lines and the bad ones, and putting them into good working order, is definitely inconceivable without extra grants for vehicles for overhead work and other labor and material resources. At the moment, Protsenko goes on, we are together with the Agroprom drafting a letter to the government in which we report more or less as follows: In completing the taking over this year of all transmission lines, and that means a very large amount, we are requesting appropriate one-time aid, and at the same time norms must be considered that would help us in future to [word indistinct] our lines with material-technical provision, and in the maintenance and operational needs of our transmission lines. I think, he says, the resolution of this matter will be positive.

Khorkov points out that many problems need to be sorted out locally, recalling that 62 people in the oblast have been taken to court by the People's Control for negligence. He does not go into detail.

Rayon agro-industrial organization chairman Trukhachev brings up the question of coal supplies for farmers; the coal is of low quality, and while kolkhoz farmers can get enough to get by, workers on sovkhozes are not even getting enough low quality coal. Beketov asks Fisun to speak on this. Fisun says there are problems in distribution. So far, 10 million metric tons of coal has been supplied above plan, of which, 1,815 million metric tons is of high quality. The ministry is looking into ways of improving the work of the middlemen.

Beketov asks Vasilkova, a farm team leader in the Voronezh studio, to talk about any shortcomings in working conditions on her farm. Beketov presses her to describe any problems, but she says she thinks all is well--there is plenty of fodder, the stock-farm workers have sufficient working clothes and are taken to work on a bus. Beketov turns to Cherniovanov for a more general picture of the state of farms as the overwintering period begins; Cherniovanov notes that the main problem this year is that the numbers of livestock to be looked after have increased. He says there is a lot of responsibility for engineers maintaining stock-farm facilities.

Beketov tells the viewers that many letters have been received complaining about inadequate preparations for winter in cities, about it being cold, and hot water supplies being interrupted and gas pressure being so low

that you cannot cook supper till nighttime. These particular complaints, which Beketov says he has cited in a previous program, come from Tashkent. A complaint from Navoi, another Uzbek town, says that for many years the radiators have not been on in apartments in winter. Similar complaints have come from Bukhara and Samarkand.

A correspondent in Tashkent then reports that fall has come to the Uzbek capital, showing deserted cafes, as winter approaches. A weather forecaster says that in Uzbekistan winter temperatures can be as low as 10-15 degrees below zero in central oblasts and 20-25 degrees below zero in the northern oblasts. The video shows a big housing development in Tashkent where M. Gudkin, a local pensioner, says he thinks preparations for winter have been going better on the whole than last year at his apartment block, but remembering how last winter it was cold in the apartments, he wonders if everything is going to be all right this winter. K. Umarov, chairman of a housing committee, says there are many shortcomings in the block, cellars are often flooded, and the shortcomings should be put right. V. Guseynov, head of a housing maintenance board, says a brigade has been formed to pump the cellars dry. The video shows major road works with water mains being repaired.

M.V. Kim, chief engineer of Tashkent urban housing board, says that, as far as the city of Tashkent as a whole is concerned out of 11,812 buildings inhabited by more than 1.3 million people, it can be said with confidence that we have taken care of everything.

Back in the Moscow studio, Khorkov says, contradicting this, that in the system of the republic's Ministry of Housing and Municipal Economy, out of 130 planned measures, by October 1 in 3 had not been fulfilled. In Tashkent, tasks for repairs to thermal plant by the gorispolkom's services had, by 1 September, been fulfilled by only 6 percent. The main work is being postponed, Khorkov says.

In the Tashkent studio, Viktor Konstantinovich Mikhaylov, minister of housing and municipal economy of Uzbekistan, says that this year in practically all heating systems, in contrast to last year, in homes, local soviets, the Hydropneumatic cleansing of heating pipelines has been taking place. After these tests it is necessary to carry out extra repairs but this will guarantee that the systems will be more durable. Most of the thermal stations are ready to supply heat, but repair work of reserve boilers continues. He admits, however, that preparations for winter in September were not adequate. Much needs to be done in Tashkent, Navoi, Nukus, etc, to satisfy the populace on this question.

Ernest Aliyevich Rezayev, deputy chairman of Tashkent gorispolkom, speaks about preparations for winter and the commissioning of new heating plants.

The video then shows Moscow, where people who have written letters of complaint are interviewed. A Moscow woman is interviewed outside her home, saying that in April the central heating pipes were to be renewed, but the pipes are still lying on the children's playground. Beketov shows

us a large bloc of apartments. Inside, a woman is interviewed in her kitchen. She says it is cold in the apartment, despite the many complaints that have been made to the local authorities. The radiators are cold. In the next apartment a mother of three is interviewed, wearing a track suit to keep warm. She has to keep a young child wrapped in blankets to keep warm. Beketov says the situation is the same in many other apartments and enterprises. An engineer says the heating is very poor where he works, despite promises to put things right. The video shows roadworks where the pipes are exposed.

Khorkov says that here, too, not everything has been done to prepare for winter. According to figures of checks by the Moscow City Committee of People's Control, he says, by 1 October there were more than 3,500 apartments in the city where the heating systems have not been properly repaired. In 13,000 apartments the faucets are not in order. More than 9,000 apartments--note this figure, Khorkov says--have leaks in roofs and walls. This is intolerable, he says, and Beketov agrees, especially as the season of rain and snow is starting. After checks much has been put right, but not everything is in order yet.

Igor Nikolayevich Yershov, deputy chairman of Moscow Gorispolkom, is seen sitting in his office. He admits shortcomings and asks for the letters of complaint to be forwarded to him so the shortcomings can be put right. Overall, he says, in Moscow, by 22 September, heating has been introduced in all buildings of the city. Now the defects discovered when the heating was switched on are being put right. It is hoped that everything will be right when the very cold weather comes.

Beketov suggests interdepartmental confusion may be the cause of the shortcomings, and Yershov says up to 16 different organizations are engaged in operating individual sectors of heat supply; we are aware of this shortcoming which has historically taken shape, and in the Moscow soviet a scheme is now being worked out to create a single organization for heating supplies in the city.

Aleksandr Aleksandrovich Nikitin, head of Moscow city housing board, complains of weaknesses in organization causing repairs of heating supply systems to take a long time, so that roads are dug up.

Finally, in the Moscow studio, Semenov sums up the winter fuel supply situation as follows: So far, our country has laid in a maximum quantity of fuel as never before. This is thanks to the following factor. First, the Ministry of the Coal Industry has been working at a steady pace this year: more than 13 million metric tons of coal above plan has been mined, or 19 million metric tons more than at this time last year. The Ministry of the Gas Industry has been working steadily, as it did before. And, at last the Ministry of the Oil Industry has made up for its lagging behind: Since September it has been fulfilling the plan, and it is now gradually making up the shortfall in oil production. All this has made

it possible for stocks of more than 80 million metric tons of conventional fuel to be laid in for consumers, as from 1 October. Virtually never before have we laid in such an amount. As far as resources are concerned, the country has prepared itself.

However, he continues, as far as capacities are concerned, here we have slight difficulties. Out of the year's plan to commission 13 million kw of capacities, only 3 million kw have gone into service, with another 1 million kw expected in October [as heard]. And what we should remember is that by the end of December we had been reckoning on new capacities of 9 million kw being in use. That is why it became necessary to step up the economy drive and decide to additionally reduce power consumption at industrial enterprises during the morning and evening peak periods in order to be able to get through the winter peak period successfully. And here, of course, Semenov continues, the issue of economical electricity consumption is very important. Without economical consumption of electricity and thermal energy, comrades, it will be very difficult for us to get through this winter, because the situation is a complex one. But with the joint efforts of the ministries involved in the fuel extraction complex, the Ministry of Power, and the ministries in charge of energy consumers, we will be able to get through this winter successfully.

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ELECTRIC POWER GENERATION

SUPREME SOVIET BODY DISCUSSES POWER INDUSTRY

PM131231 Moscow IZVESTIYA in Russian 10 Nov 86 Morning Edition p 2

[Article by M. Berger under the rubric "USSR Supreme Soviet Ahead of Session": "Power Industry: Gains and Losses"]

[Text] In order to appreciate the sheer size of the fuel and energy complex, it should be remembered that 10 percent of people employed in the country's industry work in it. Approximately one-third of all capital investments channeled into our industry is allocated to this complex. Some R180 billion is the sum that will be spent on the development of the complex in the 12th 5-Year Plan.

The fuel and energy complex is the extraction of all types of energy raw material (oil, gas, coal, shale), the power and heat generating industry, oil and gas pipelines, and power and heating networks. That, in the most general outline, is the range of questions discussed for 3 days by deputies at sessions of the preparatory commission for the fuel and energy complex to examine the corresponding indicators of the draft 1987 plan and budget. The sessions were chaired by Deputy P.S. Fedirko, first secretary of the Krasnoyarsk CPSU Kraykom.

This year is very complicated for power industry workers.

To be more specific, the plan is having to be fulfilled in conditions where the nuclear power industry has fallen considerably behind its plan indicators because of the accident at Chernobyl. What is more, owing to a water shortage in the rivers of Central Asia, the total output at hydroelectric power stations is also lower than planned. And the whole of this "energy shortage" must be covered--and is being covered!--by thermal power stations. The annual target is 1,605 billion kilowatt-hours and, according to USSR Gosplan estimates, it will be met.

The "extractors" are helping thermal power stations to cope with this significant increase in their workload. The miners are considerably exceeding their targets and will produce an additional 15 million metric tons of coal by the end of the year.

More gas will be obtained than planned and oilmen will probably reduce their extraction arrears to a minimum. This groundwork is particularly

important because the current change in the structure of electric power production, that is, the increased load on thermal power stations, will persist in the plan for 1987. Consequently, labor collectives in the extraction sectors are adopting counterplans for next year: 9 million metric tons of coal, 3 million metric tons of oil, and 9 billion cubic meters of gas, all in addition to the original targets.

Representatives of the corresponding ministries spoke with enthusiasm and satisfaction of what has been done and achieved. However, the deputies were interested not only and not so much in the successes as in the problems connected with developing the complex and making maximum use of its potential.

The department leaders were more restrained in their assessment of this aspect of activity, which could not be said of the deputies and experts invited by the commission. The discussion about losses was particularly harsh.

An average of 2.4 grams more standard fuel than the set norm is used for every kilowatt-hour produced in the country. This may seem a relatively small overrun, but there are trillions of kilowatt-hours! Because of this alone, the country's energy systems burn over 2.5 million metric tons more standard fuel than they should each year. So the result is that some of the fuel extracted in excess of the plan is used to cover this overconsumption.

But losses in the power networks are particularly great. They are, of course, inevitable, but again, the whole problem is the size of the losses. In our country these losses still stand at 9 percent, whereas other indicators--4.5-5.5 percent--are typical of world practice. And what is the "extra" 4 percent? It is half of the annual output of the country's entire nuclear power industry. But the level of losses in these networks is falling at an insignificant rate--0.07 percent per year.

Responsibility for the power industry's losses rests for the most part with the machine builders, who supply the necessary equipment in insufficient quantity and behind schedule.

"But," Deputy N.K. Grinko, director of the A.A. Skochinskiy Mining Institute, says, "the Ministry of Power and Electrification itself fails to fulfill plans for new equipment."

Of 17 measures relating to this section, only 2 have been implemented. Is it possible to economize without introducing economical technologies? Construction of an installation to process Kansk-achinsk coal at the Krasnoyarsk TETS-2 has not been completed. An installation to process shale at the Estonian GRES has been in the process of construction for 7 years now. Steam and gas installations for producing power and heat have not been introduced for many years...

"And what about compensator units to reduce losses within the networks?" A.M. Lalayants, deputy chairman of the USSR Gosplan, added. "Last year only 35 percent of the planned number were actually commissioned. And those that were installed are used at no more than 65-70 percent of capacity. How long can this situation be tolerated!"

That is righteous indignation. But Gosplan, as deputies pointed out, nevertheless does tolerate the situation: The target for reducing losses within the networks is 0.33 percent for 1987. And there is no guarantee that it will be met.

"We are overlooking the colossal reserve represented by capacity gaps," Deputy Sh.R. Abdurashitov, "Bashkirenergo" chief, says. "We are literally 'carrying' 35 million kilowatts of capacity without using it."

I should explain what these gaps are; the question of them has been raised by deputies more than once. They are the disparity between the potential capacity of the power industry and the proportion of this capacity directly used in energy production. This capacity is idle even during the autumn and winter peak periods. Why? It happens because a GES, for example, prematurely uses up its water supply from reservoirs or, conversely, is unable to use it because of restrictions introduced because of miscalculations in designs or shortcomings in construction. Or else there are restrictions on using the capacity of power units because of the unsatisfactory technical condition of these units or poor-quality maintenance. Another reason can be that the capacity of electric power stations is limited by the capacity of power transmission lines. All these are described as gaps.

"What is being done to reduce these gaps?" deputies asked S.I. Sadovskiy, first deputy minister of power and electrification.

"In the course of the 5-year period we plan to reduce the 35 million kilowatts by 19.5 million. Some 6.5 million cannot be reduced because of the poor quality of fuel. And the remaining capacity I would not even class as a gap because it is at GES'ES."

That is rather a strange attitude to take. It is a well known fact that a number of Siberia's largest hydroelectric power stations have large "reserve capacities" because of the undeveloped nature of power transmission lines (and the power industry workers themselves construct them) and restrictions on water consumption. And today the total gap between installed and utilized capacity is still at the level of the 10th 5-Year Plan.

Representatives of the Ministry of Power and Electrification assured deputies that the plan for the commissioning of power transmission lines will be fulfilled. But, according to data made available to the commission, in the first 9 months the Ministry of Power and Electrification coped with only half of the annual target. And in previous years the plan to commission networks was only 85-90 percent fulfilled.

Power industry workers also spoke of successful fulfillment of the equipment repair plan. However, here too the commission had to provide clarification.

"Yes, the repair plan is largely fulfilled," Deputy A.K. Mukhametzvanov, general director of the "Taftneft" Production Association, said, "but with what degree of quality? This year one power unit in two has had to be shut down after capital repairs. The losses from this are vast. And it is not only a question of unproduced energy. Oilmen, for example, have lost production of 200,000 metric tons of oil because of unscheduled outages."

It must be said that the Ministry of Power and Electrification proposed its own measures to improve the servicing and repair of equipment. What kind of measures? It requested that the number of personnel be increased by 10,000 for this purpose and that the corresponding wages fund be allocated. The ministry would also like more equipment than that at present allocated by the Gosplan.

In other words, it is mainly a question of extensive methods to improve the situation. But what are the reserves for intensification?

According to information from selective checks, the intrashift idle time of machines and mechanisms amounts to 18 percent in the ministry. An increase of almost one-fifth in the [machine] pool could be secured by improving labor organization. And growth in wages in this sector is considerably ahead of labor productivity growth rates this year. Should the ministry not therefore first look to itself for additional resources?

The internal reserves of the gas industry were also analyzed in detail.

The commission cited the following fact. In Komsomolsk in Ivanovo Oblast a steam and gas turbine produces exhaust gases heated to a temperature of 600 degrees. Yet alongside, the construction of a boilerhouse to generate heat is in full swing.

"Why is there this kind of waste? We must prohibit the use of other resources where there is hot waste gas," A.M. Lalayants suggested.

"We must" is a wish for the future, but what is happening right now? In the course of the first 9 months this year the Ministry of the Gas Industry has flared off and released into the atmosphere approximately 1 billion cubic meters of gas.

"You get the feeling that everyone is simply beginning to get used to huge losses," Deputy Ye.A. Yeliseyev, first secretary of the Kabardino-balkar CPSU Obkom, continued the discussion. "Tens of millions of gigacalories of heat are discharged into the atmosphere by gas compressor stations and billions of cubic meters of gas are irrevocably lost owing to cracks and leaks in gas pipelines. A check carried out in July showed that some of the leaks discovered 2 or 3 years ago are still in the same condition."

Deputy G.I. Motsak, leader of a team of longwall workers at the Kosmonavty Mining Administration at the "Rovenkiantratsit" Production Association, asked ministry leaders the question: How are departments restructuring their work in view of the CPSU Central Committee, USSR Supreme Soviet Presidium, and USSR Council of Ministers resolution "On Measures To Further Enhance the Role and Increase the Responsibility of Local Soviets in Speeding Up Socioeconomic Development in the Light of the 27th CPSU Congress Decisions"?

Ministry leaders spoke about introducing the practice of first coordinating draft plans with the corresponding soviets. Soviets have also begun to submit projects to develop settlements and plans to build social, cultural, and consumer service facilities.

All these are positive changes. But to coordinate a plan and to fulfill it, as the deputies pointed out, are far from the same thing.

All the ministries in the fuel and energy complex are markedly behind with commissioning housing and social, cultural, and consumer service projects. For many years a large number of settlements have been without laundry, dry cleaning, and hairdressing services and are short of schools and clinics. The Ministry of the Gas Industry, for example, fulfilled the 9-month plan for commissioning schools by 75 percent, that for clinics by 73 percent, and that for children's preschool institutions by 63 percent.

"And all these ministries," Deputy A.G. Khvorostyan, mining foreman at the V.I. Lenin Mine of the "Artemugol" Production Association, said, "complain of a shortage of manpower. But how can there be enough when this kind of attitude is taken to people's needs? The quality and technical standard of the tools and equipment with which the mines are supplied is also a social issue," Aleksandr Grigoryevich, who worked for many years with a pick in sloping coal seams, continued. "But the USSR Ministry of the Coal Industry is itself failing to fulfill the program to retool mines, although it has its own machine building base."

Without proper attention to the social sphere, deputies repeatedly stressed in their speeches, we can hardly succeed in tapping the most important reserve--the human factor--without which economic tasks today cannot be resolved.

In the course of the discussion the commission drew up proposals for the draft conclusions of the chambers' plan and budget and other standing commissions on the 1987 plan and budget.

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ELECTRIC POWER GENERATION

WEEKLY WARNS OF POSSIBLE POWER OUTAGES

PM071059 Moscow EKONOMICHESKAYA GAZETA in Russian No 45, Nov 86 (Signed to Press 30 Oct 86) p 3

[Report by A. Nikolayev: "Electricity: How Quotas Are Observed"]

[Text] The country's power stations generated 1,167 billion kilowatt-hours of electricity in the first 9 months of this year, which is 100.5 percent of the plan. TETS and GES accounted for the overfulfillment. The electricity generated by AES was less than planned.

The coefficient of utilization of installed capacity for the "electricity" sector as a whole was 72 percent, which is in excess of the control figures.

At the same time, unscheduled maintenance work, the reconstruction of generation capacities at AES to ensure the safety of their operations, and the shortage of water resources in several regions in the country demanded strenuous efforts to maintain the country's energy balance. Restrictions were imposed on consumers at peak hours in parts of the south, the center, the North Caucasus, the Transcaucasus, and Central Asian republics. As a rule, restrictions were imposed on enterprises that had exceeded their set quotas.

As part of preparations for the winter, organs of the State Inspectorate for Power Engineering Control are systematically monitoring adherence to energy consumption regulations by industrial enterprises in all power grids in the country. The results of these inspections show that most power grids and enterprises are fulfilling their tasks as regards consumption quotas for electricity and electric power.

However, there are still quite frequent instances of economic mismanagement, waste of fuel and energy resources, and breaches of quota discipline. For example, electricity consumption quotas have been exceeded by 100 million kilowatt-hours in Turkmenistan, by 56.7 million kilowatt-hours in Pavlodar Oblast, and by 55 million kilowatt-hours in the "Donbassenergo" power grid, as well as in many other regions.

The most serious violation is the consumption of electricity in excess of allowed quotas at peak hours. This could lead to the automatic disconnection of large numbers of enterprises that strictly observe quota discipline, and even to disorganization in the work of complete power grids.

In September, for example, such violations occurred in the Azerbaijan and Estonian SSRs, Perm and Ulyanovsk Oblasts, Krasnodar Kray, and the Udmurt and Chuvash ASSRs. This was the result of unsatisfactory work by economic leaders to save electricity, introduce energy-saving technologies, and reduce the electricity-intensiveness of the output produced.

Many enterprises overstate without any reason their electricity consumption norms. The Raychikhinsk glass plant and the "Stavropoltrud" Production Association under the USSR Ministry of the Construction Materials Industry, the Lvov plant for motor vehicle and tractor spare parts under the USSR Ministry of the Automotive Industry, and the Kustanay tire plant under the USSR Ministry of the Petroleum Refining and Petrochemical Industry have thus essentially "overreported" a saving of 12-18 percent in energy consumption.

Instances of wasteful consumption of electricity were brought to light at the "Karagandatsement" Production Association, the Zhdanovsk metallurgical combine, the Volgograd aluminum plant and petroleum processing plant, the Zavolzhye motor vehicles plant, and other consumption facilities.

Leaders and party committees at enterprises that allow breaches of quota discipline must take immediate measures to correct the situation. The coming winter will not forgive any economic mismanagement.

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LABOR

REORGANIZATION OF INDUSTRIAL WAGE SCALES ANALYZED

Shcherbakov Analyzes Reforms

Moscow SOTSIALISTICHESKIY TRUD in Russian No 4, Apr 86 pp 28-35

[Article by V. Shcherbakov, candidate of economic sciences, chief of the Wages Department of USSR Goskomtrud: "The Unit of Measurement of Work and Payment for It: On Improvement of the Wage-Rate System in Machinebuilding"]

[Text] Note From the Editors: As is well known, in accordance with the decisions of the 27th CPSU Congress, new wage rates and salaries are to be introduced during the current 5-year planning period in the production sectors of the economy mainly on the basis of enterprises' own resources. The approaches which this article proposes for structuring the wage-rate system for remuneration in machinebuilding do not preclude other alternatives that would take into account the specific nature of branches and sectors. We accordingly call upon key officials of associations and enterprises, plant and shop economists, brigade leaders and workers, scientists, and all the journal's readers to present their arguments in this connection and make specific proposals on the topics which are dealt with.

Machinebuilding is given the principal role in performing the key political and economic task of the 12th Five-Year Plan--acceleration of scientific-technical progress in all sectors of the country's economy. The 27th CPSU Congress accordingly set important tasks for Soviet machinebuilders. During the 12th Five-Year Plan they are to increase output by 40-45 percent and reduce the labor intensiveness of output 30-40 percent, substantially increase the production of equipment being manufactured for the first time, and greatly speed up the renewal of the active part of its own fixed productive capital. In actuality it is a question of a complete retooling of the entire machinebuilding complex accompanied by a reduction in the size of the labor force. Of course, such an extremely difficult task cannot be performed with the traditional methods. A radical turnabout in the operation of machinebuilding requires a major restructuring of the entire organization of work, the organization of production, and the organization of management, as well as a solid improvement in the economic mechanism.

One of the main ways of performing this task is to improve the organization of wages, since they are a very effective incentive for higher labor productivity and achievement of high final results.

It is well known that the wage systems in place today took shape long ago and do not meet the higher requirements with respect to a number of elements. That portion of the wage which comes from wage-rate schedules is in need of the most significant changes.

The base rate is the basis and pivot of all wages. On the one hand it determines the absolute size of every worker's wage, while on the other it is the principal lever for centralized regulation of wages, including regulation of wages between the sectors of the economy. Analysis shows that in recent years the relative share of the base rate in total wages has decreased considerably. This not only detracts from centralized regulation of wages, it also reduces the workers' motivation to improve their qualifications and to master more complicated work.

The wage rate increases that have occurred in recent years mainly affected the low-paid worker categories, which meant a smaller income spread between low-skill and high-skill workers. Today the ratio between the wage rates of the extreme categories (one and six) is 1:1.71 in machinebuilding. The base wage represents only between 50 and 60 percent of average total wages. This means that a worker's wage does not depend very much on his skill category. Yet the average complexity of work is increasing constantly. At the same time the relative share of skilled work is also increasing under the influence of scientific-technical progress. But these processes have not been duly reflected in worker remuneration. In recent years relations in remuneration between workers and engineering and technical personnel have deteriorated. The growth rates of the average wage of foremen and other ITR have been lagging behind the growth rates of the average wage of workers in practically all branches of machinebuilding, and in some of them the wages of ITR have even dropped below those of the workers, even though the average skill rating of the jobs done is relatively low. There are mainly two reasons for this. First, in previous years when the wage rates of the workers were raised, there were practically no changes in the salaries of engineering and technical personnel, and second, different principles govern the structure of the wages of workers and engineering and technical personnel. Whereas the wages of workers depend mainly on output, i.e., on the rise of labor productivity, the wages of engineering and technical personnel are related to the position occupied and to the overall results of the enterprise's economic performance.

The growth rates of wages of piece-rate workers determine the growth rates of the wages of time-rate workers. Once again the deficiencies of the wage mechanism mainly account for this. The wages of piece-rate workers are tied more closely to the results of work than in the case of the time-rate workers. We should note in this connection that relatively high growth rates of wages of piece-rate workers have to some extent occurred because the setting of work quotas was imperfect. Even though approximately 90 percent of the quotas in effect in machinebuilding today are considered technically substantiated, they are fulfilled at a level of 129 percent even according to the official statistics. Analysis shows that sometimes actual output may double the "technically substantiated" quotas. This means that actually they have not been substantiated at all for a long time. In some cases the quotas have been consciously lowered so as to guarantee a rise in the wages of workers, since the wage rate

has remained unchanged for a prolonged period. In other cases it is explained by actual deficiencies in the setting of output quotas: in particular the fact that revision of output quotas occurs episodically, whereas changes in production and scientific-technical progress as a whole are continuous in nature. Consequently, the potential base of labor is changing constantly, but this is mainly manifested only in the wages of piece-rate workers, not those of all the enterprise's personnel. All of these factors have in fact had the result that the weight of the base rate in the structure of total wages has decreased, and the low base wage rates are encouraging a race for the quantity of output, quite often to the detriment of its quality.

Present-day production cannot as a system be built on low wage rates and thereby dependent on the need for high overfulfillment of output quotas. If that overfulfillment drops off, then many enterprises simply do not fulfill state plans. The low level of wage and salary schedules at the same time detracts from the incentive role of the entire wage system, in which all its elements are supposed to be operative. If one of those elements does not altogether fulfill the function expected of it, then the others begin to figure as compensators of its deficiencies, and to a certain extent this has been manifested under present conditions. For instance, many types of bonuses are used for simple mechanical maintenance of the present level of the average wage and have essentially been turned into a permanent component of the wage. This especially applies to bonuses for fulfillment of production assignments and the principal results of economic activity. A system of special bonuses has gradually been created in order to stimulate particular lines of effort, it is not uncommon for workers to receive incentives several times for one and the same indicators, although they come from different sources. Various supplements to wage rates and salaries are used analogously.

It is clear from what we have said that there needs to be a radical revision of work quotas and standards, but as a practical matter this cannot be done without a serious revision of the rate and salary schedules and an increase in their relative share in the structure of the wage. The socially necessary standard quantity of labor must correspond to the measure of its remuneration.

The principles used in structuring certain other elements of the wage system have become outdated. To be specific, higher rates (to compensate harmfulness) are used today to compensate adverse working conditions. This is another mechanism that does not altogether meet present-day requirements.

First of all, the higher remuneration is automatically extended as production expands on a new technological basis. This is most typical in such occupations as painters, welders, smelting workers, shake-out workers, and so on. The point is that the higher rate is related not so much to the actual working conditions at a particular work station as to the occupation. For example, the work of painters is remunerated as a rule at the same (higher) wage rates even though some operate a spray gun and actually do work under harmful conditions, while others stand outside painting chambers, and their working conditions actually do not differ from those of an operator in a machine shop.

Second, every year nearly 1.5 billion rubles are invested to improve working conditions in machinebuilding alone, but the return from those resources is insufficient, and one reason is that payments for harmful conditions are not discontinued even if conditions have become normal. As a practical matter it is not very realistic to transfer to lower wage rates some of the workers in a brigade or section where the working conditions have improved through the performance of appropriate measures, including those of certifying work stations.

Third, increased worker mobility is typical of present-day production; during the shift the workers do actually spend time under differing conditions. In this case it is very difficult to monitor the correctness of the payment of piece-rate workers according to the schedule in this case, and it is practically impossible to do so for time-rate workers.

Quite a few problems have accumulated in payment for the work process itself. For example, a drill press operator actually cannot leave his work station and is involved in active work 70-90 percent of worktime. In the case of a shaper operator, especially on large shapers, the active load does not exceed 30 percent of worktime, and he could very well be doing other work. But the wage rate is the same for both workers. Of course, additional work, say by attending more than one machine tool, must be accompanied by additional payment, and that is the way it should be. But an insufficient load must also be reflected in the wage, above all in that portion that is taken from the schedule. But the present wage mechanism does not afford such a solution.

If this mechanism is to "work," it will be necessary not only to increase the relative share of the wage rate in remuneration, but also to make the entire wage-rate system more flexible and expand the independence of enterprises in administering it. Since 1986 a test of new approaches to structuring the system of remuneration based on the wage-rate schedule has been prepared in 60 associations of machinebuilding branches. The search is being made for ways of instilling in work collectives greater motivation to increase production efficiency by introducing new wage and salary schedules.

It has been recommended that the wage rates of workers be raised 25 percent and that the maximum salaries of engineering and technical personnel and employees be raised 30-35 percent. We need to mention the qualitatively new mechanism for the adoption of new wage-rate schedules and salaries. Whereas previously a sizable portion of the resources to raise them was allocated from the state budget, now the enterprises themselves must seek out those resources by activating internal potential; that is, they must earn them. Provision is made in this connection to guarantee that the conditions of remuneration depending on wage-rate schedules improve predominantly for workers who have the most vigorous impact toward speeding up scientific-technical progress. For example, the maximum salaries of designers and process engineers are being raised 40-45 percent.

Today, as is well known, two groups of wage rates are in effect in machinebuilding--those for ordinary work and those for operation of machine tools. Experience has shown that this is not enough. It would be advisable to raise

the wage rates of workers who are creating new technology and who are the first to debug it. For that reason a third group of rates has been distinguished; it is almost 20 percent higher than the corresponding rates in the schedule for ordinary operations. The higher rates are applied to remunerate the workers of tool shops and other shops for the preparation of production (toolmakers and machine tool operators using general-purpose equipment) as well as repairmen, setupmen, and other workers attending automatic production lines, machine tools with programmed control, flexible production systems, and other especially sophisticated, one-of-a-kind, and highly efficient equipment. The wage rates are raised 30-45 percent for those and anyone who manufactures a particularly sophisticated product.

At the same time it has been proposed that an eight-class wage-rate table be introduced instead of the present six-class table in order to intensify the stimulation of improvement of qualifications and professional skill for those workers.

Under the new conditions the system for remuneration on the basis of wage-rate schedules becomes more flexible. On the basis of many years of practical effort on the part of enterprises of Minavtoprom (VAZ, KamAZ, ZIL, and GAZ) and those enterprises serving as initial facilities for introduction of the VAZ system in other branches of industry, the supplements (as high as 24 percent) to the wage rate, differentiated according to the working conditions at the particular work station, are applied in order to compensate for adverse working conditions, and it is also allowed to institute a supplement amounting to as much as 12 percent of the wage rate for a high level of effective use of worktime. The proportions of these supplements are established by the manager of the enterprise in agreement with the trade union committee according to the results of the certification of work stations.

The mechanism for instituting the supplements pertaining to working conditions is rather simple and well known. A number of parameters related mainly to the medical and biological conditions of work are evaluated, and the proportion of the supplement is determined accordingly, as a function of the harmfulness of the working conditions. Lists of operations and occupations with harmful and particularly harmful working conditions are used in the first stage as a reference and as a basis for establishing them, and then as work stations are certified, the full transition has to be made to evaluation of working conditions at every work station on the basis of the specific indicators. This mechanism for compensating working conditions possesses substantially greater flexibility, makes it possible to be responsive in appreciation of individual working conditions, concentrates the attention of the management and trade unions on specific work stations, and facilitates development of a sounder policy in the direction of resources for retooling and improvement of working conditions. At the same time this is a supplemental factor stimulating a rise of productivity. The reason is that reduction of supplements for adverse conditions because they have improved will give workers a stronger aspiration to maintain the level of wages by raising the productivity of labor.

The mechanism for establishing supplements for higher work intensity is more complicated. Here the evaluation is made of the intensity of active (useful)

work in the context of the standard allowance of labor inputs. If the setting of standards is well organized, it is not so difficult to conduct this analysis. The standard work intensity is determined here for each type of operation, and if the actual load exceeds it, then the manager of the enterprise has the right to establish a supplement to the wage rate taken from the schedule as a function of that positive difference. This approach stimulates the workers to seek out untapped potential, to fulfill planning targets with a smaller work force, and to take over additional functions, operations, and jobs. It is not difficult to notice that the supplement is not related to the worker's occupation, but to the actual strenuousness of his labor, and it is credited for the time he actually works under the particular conditions.

It has been proposed that large changes be made in remuneration of engineering and technical personnel and employees on the basis of the schedule. We need first of all to note the following fundamental points.

The relation is improved between the level of the wage rates of workers and the salaries of ITR. On the whole their salaries increase approximately 10-20 percent more than the wage rates of workers. Advantages are moreover given to foremen, section and shop chiefs, designers, process engineers, and personnel of the quality inspection department.

Engineers, economists, technicians, and other specialists are assigned to categories by analogy with the categorization of designers and process engineers and the classes earned by foremen in order to give engineering and technical personnel greater motivation to improve their qualifications and the quality of their work and to speed up scientific-technical progress. At the same time better opportunities are created for improvement of professional skill in the position occupied. The range between the highest and lowest salaries is being substantially increased for this purpose. For example, whereas earlier an engineer could receive from 115 to 150 rubles at enterprises manufacturing a particularly sophisticated product, now his salary may be from 140 to 230 rubles. Designers and process engineers may receive a salary increase from 140 to 260 rubles on the basis of improved professional skill and qualifications. Moreover, supplements to salaries may be instituted for high performance and performance of responsible jobs in a proportion not to exceed 50 percent of the salary for designers and process engineers and 30 percent for other ITR. Consequently, a first-category designer who is performing well may have a salary of 360 rubles. This approach to structuring salaries gives the worker greater motivation to improve his professional skill, and this without a doubt has to be reflected in an acceleration of scientific-technical progress. Under the system now in effect a foreman may have a salary from 140 to 155 rubles. While under the new system it would run from 170 to 220. If he qualifies for the first class, his salary increases 20 percent, and if he achieves high performance, he may be awarded a supplement not to exceed 50 percent of the salary. Such measures must unconditionally promote stabilization of the staff of line managers and attract the most experienced and highly qualified specialist to this work.

Provision has been made for a further increase in the role of certification in connection with evaluation of the effectiveness of the work of engineering and

technical personnel. The managers of associations and enterprises have been granted the right to use it in making decisions not only about promotions, improvement of category (class), salary increases and establishment of supplements to them, but they also have the power to reduce the salaries of individual workers to the minimum levels for the given job and to reduce or discontinue supplements. Introduction of the categorization of engineering and technical personnel and widening the salary brackets are being accompanied by elimination of the planning of the ratio between the number of senior and ordinary specialists and the planning of average salaries according to a fixed scheme.

The new approach to structuring the conditions of remuneration based on wage and salary schedules signifies in practice a broadening of the economic independence of associations and enterprises in carrying on their production-economic activity, which is altogether in line with today's requirements. At the same time accountability for performance in the conduct of economic activity is also being strengthened. In this case we are referring to the fact that the funds necessary to introduce the new wage and salary schedules must be obtained by mobilizing the internal potential of the enterprise. The raising of wage rates and salaries and removal of a large number of restrictions regulating payment of money to particular workers are accompanied by a closer monitoring of the use of the amount of resources used for remuneration.

As is well known, under the new conditions of economic activity the wage fund and the material incentive fund are regulated mainly by the application of stable growth rates. This approach is unquestionably more progressive than the individual planning of the wage fund. Associations and enterprises are allowed to use the wage fund and a portion of the resources of the material incentive fund built up in accordance with the new conditions for economic activity in order to introduce the new wage and salary schedules. No additional subsidies whatsoever are allocated from the state budget. Associations and enterprises must join the trade union committees in performing an extensive set of technical, organizational, and economic measures ensuring reduction of the size of the labor force and a saving on resources for remuneration. This can be achieved first of all by raising the technical level of production, reducing the share of manual labor and improving working conditions, by certifying and optimizing work stations, by achieving balance between jobs and labor resources, and by increasing the efficiency of utilization of fixed capital and capital investments. A large benefit should be achieved through broader dissemination of collective forms of the organization of work and work incentives aimed at the end results, and above all through broader introduction of cost accounting (khozraschet) and contract principles in the work of brigades, sections, and shops.

The raising of wages and salaries must be accompanied by a radical change in work norm setting. The present quotas and standard levels of work inputs need to be reviewed and replaced by quotas and standards that are more progressive and technically sound. The quotas of workers have to be revised so as to guarantee a progressive relationship between the rise of labor productivity and that of the wage. At the same time there should be a close examination of the justification for the application of all types of supplements, and in a

number of cases the assignment of rates to job positions should be entirely redone. The quotas for engineering and technical personnel should on the average be raised at least 25 percent. This can be achieved through more precise determination of the functional duties of ITR and employees and by making them more accountable for the work which is to be done, by introducing sectoral allowances on staff size and improvement of the management structure, enlargement of certain subdivisions, elimination of parallelism and duplication of work, and a reduction of the number of personnel on that basis.

The bonus system also needs to be improved so as to strengthen its connection to the actual results of work. This system should first of all be simplified and made understandable to every worker, and the rights of work collectives in setting the indicators and conditions of the bonus system and the specific amounts of the award should be substantially broadened. The bonus system must be aimed at attainment of high final results in production activity. For supervisory personnel of associations, enterprises, and organizations a new system is being introduced of separate bonuses for achieving the most important indicators: in particular, for fulfillment of contracts and planned deliveries adjusted for the quality of the product produced, the rise of labor productivity, and reduction of production cost (growth of profit). As for specialists and workers, the qualifying conditions and size of bonuses are determined by the work collective on the basis of the tasks confronted by the enterprise as a whole and by its structural subdivisions. The incentive for improvement of product quality, for introduction of progressive engineering and technology, and for application of advanced know-how must be directly dependent on the benefit achieved as the result of this effort. At the same time the limits have been removed from the maximum size of the bonuses paid for all categories of workers except managerial personnel. The size of the bonus paid to a particular worker is limited only by the incentive resources which have been earned by the collective and the quality of the worker's personal effort.

The funds necessary to introduce the new wage rates and salaries must be found by improving the organization of work, the organization of production, and the organization of management, by revising output quotas, by reducing the size of the labor force, by strengthening the relation between the wage and the final results of work, and by changing the structure of the wage. This clearly is a very painstaking effort, one that is complicated and relatively lengthy. It cannot be done on a one-time basis. It is not that simple to earn the resources to raise wages and salaries. That is why a new mechanism is being envisaged for raising them. The new wage rates and salaries may be introduced as the necessary funds are accumulated and the work collectives become ready to perform this measure: all at once or in two stages (first an increase in wages and salaries by at least 10 percent, and then in the full proportion); by structural subdivisions of associations and enterprises or for individual categories of workers and worker occupations as they become ready for the transition. Moreover, the new salaries for personnel of the management staff are to be instituted after the conversion of all workers of the enterprise to the new conditions for remuneration. But in all cases the rise of labor productivity must be faster than the rise of the average wage. The date set and the sequence for raising salaries and wages must in fact take this into account.

Commissions headed by directors need to be created to supervise the entire effort to make the conversion to the new conditions of remuneration. Specialists of the relevant staff services and subdivisions, production front rankers, brigade leaders, and representatives of public organizations should be members of those commissions.

Performance of the measures outlined will make it possible to expand in fact the economic independence of enterprises, to make them authentically responsible for the results of their activity, and to join improvement of the management of enterprises from above with development of the economic mechanism within the production entity from below and to bring its requirements to every worker. The new approach to revision of the wage and salary system will help to perform the most important task defined by the new version of the CPSU Program and the Basic Directions for the Economic and Social Development of the USSR Over the Period 1986-1990 and up to the Year 2000--a substantial rise of labor productivity.

Extending the right to work collectives to introduce new wage and salary conditions with their own reserves is at the same time the guarantee of the state that the wage saving achieved in this connection will remain at the disposition of the associations and enterprises. The measures proposed will serve as an additional incentive for mobilizing organizational, economic, and social factors in raising production efficiency, will strengthen the motivation of work collectives to speed up scientific-technical progress and introduction of advanced know-how, as important directions for seeking out resources for raising wage rates and salaries.

Of course, introduction of the new conditions for remuneration will make a sizable number of workers available. The present system of job placement, training and retraining of workers should accordingly be thoroughly revamped, and a number of economic, social, and legal problems resolved. It is self-evident that at the same time a substantially greater role will go to local labor agencies. They should be strengthened, they should be created in those cities where they do not exist, and the network of the state job placement service should be expanded, and the principles of pay-as-you-go applied to their operation. Enterprises are required to give workers 2 months' notice about their upcoming dismissal and at the same time furnish information about their becoming available to higher levels of management and to local labor agencies. Authentic concern has to be shown concerning every worker displaced. Thought needs to be given to this even today, and the necessary measures provided for and performed.

It seems to us that carrying out what we have outlined will help performance of the tasks which the 27th party congress has set machinebuilding, to increase the intensification of the economy, and to accelerate scientific-technical progress.

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Reactions to Shcherbakov Article

Moscow SOTSIALISTICHESKIY TRUD in Russian No 9, Sep 86 pp 70-84

[Responses to the Shcherbakov article by various authors: "How Wage Rates and Salaries Are To Be Increased Out of the Resources of Enterprises"]

[Text] "The Unit of Measurement of Work and Payment for It"--that was the title under which an article by V. Shcherbakov, chief of the Wages Department of USSR Goskomtrud, on improvement of the wage and salary system in machinebuilding was published in the fourth issue of our journal for 1986. It has aroused great interest on the part of readers. Today we are publishing some of the responses to it.

Increasing the Flexibility and Mobility of Conditions in Wage and Salary Scales: O. Kuzmin, docent of Lvov Polytechnical Institute, candidate of economic sciences

The wage rates of workers and the salary scales of ITR and employees are the basis of financial work incentives. It is with them that remuneration is regulated within and between sectors and distribution of wages in accordance with the quantity and quality of work is guaranteed.

A study of the factual material and the practical experience of machinebuilding enterprises show that the wage-rate system and salary scales in effect have a number of deficiencies which have been diminishing the effectiveness of financial work incentives. A number of factors have not been reflected in the wage and salary conditions: for example, length of service, experience, job monotony, worker responsibility for equipment, physical and mental strain, the mastering of related occupations, and so on. The slow rate of change of the wage and salary conditions have resulted in a gradual lag of the proportion of the pay based on these schedules and scales behind the rise in the level of income, and this has been detracting from the role of the wage and salary system in centralized state regulation of wages. There is no clear functional relationship among the quantitative amount of earnings of various categories of ITR, workers, and ITR. Only two salaries have been instituted for practically all specialists--for engineers and for senior engineers, which in essence comes down to leveling in remuneration. Only the work of designers and process engineers is remunerated with respect to three categories, which facilitates greater differentiation of their income. Workers who have reached the maximum salary have no prospects for any further rise in income. At machinebuilding enterprises they represent 50-70 percent of all ITR and employees. In addition, the deficiencies of the wage and salary system have a number of adverse side effects: work quotas become less strenuous and the strenuousness of work quotas tends to vary more widely, and the desire to improve qualifications is diminished.

The deficiencies of the wage and salary system in the context of socioeconomic acceleration becomes a serious obstacle to creating the maximum financial motivation of all worker categories without exception to boost the growth rates of labor productivity, to reduce production cost, and to improve product quality. The new wage and salary conditions in machinebuilding, which have been

described in detail in the article by V. Shcherbakov, are aimed at increasing the mobility and level of differentiation of wage schedules and salary scales and at granting enterprises greater independence in regulating wage levels and relations and in stimulating prestigious and effective work. At the same time, we would like to express certain considerations with a view to choosing the most optimum version of the wage and salary system.

With respect to improving the conditions of the wage and salary system all factors reflecting the quality of labor can be broken down into two groups--fixed and variable. Those which are fixed might include those which are shaped in the process of training, improvement of qualifications, work at the enterprise, participation in improvement of efficiency and innovation, the mastering of progressive methods and procedures, and so on. These factors include education, length of service both in general and in the given occupation (specialty), experience, practical skills, theoretical knowledge, and professional skill, etc. The fixed factors operate over the entire length of the worker's work activity. They build up as he acquires experience and knowledge, as his length of service increases, as his level of education rises, and this must be reflected in the worker's wage.

We should include among the variable factors of the quality of work those which are operative for a limited time. Usually they change with the change of job, change in the character of the work process, change in the attitude toward work, and so on. The variable factors are punctuality, initiative, physical and mental effort, assiduousness, conscientiousness, working conditions, the intensity of work, help to others in performance of the work process, participation in the creation of new technology, the mastering of related occupations and functions, etc.

The classes of workers and the categories of ITR and employees should be established so as to take into account the fixed factors (to some extent the present system does this for worker classes). The number of classes (there are six in the present wage-rate scheme) could be increased, since the fixed factors include length of service, experience, improvement of qualifications, etc., which are constantly changing. In machinebuilding there might be 10 classes. It would be advisable to establish several categories for ITR and employees. This would give workers prospects for improving their income over practically the entire length of their work activity and will encourage continuous improvement of qualifications.

Categories could be established for ITR in any occupation and position in enterprises, associations, and ministries. There might be cases when a manager (department chief, enterprise director, etc.) would turn out to have a lower category than certain of his subordinates. First, this will reflect differences in qualification (after all, it is not always necessary by any means to appoint the most qualified worker to be the manager in production); second, it affords the necessary financial and nonfinancial incentives for managers to constantly improve their qualifications, which has a favorable effect on the performance of the collective he manages.

Within each class (category) levels of qualifications can be instituted to reflect the variable factors. A study of actual wage relations of the workers of machinebuilding enterprises in Lvov Oblast shows that about 15 levels based on qualification could be established within each worker class and each category for ITR and employees. The increments based on the levels of qualification would be defined in percentages of the wage rate or salary. The schematic representation of the entire wage and salary system for workers and ITR and employees could take the form of a table.

Schematic Representation of the Entire Wage and Salary System

Level of Qualification		Base Wage (salary)	Increments based on Levels of Qualification, Defined in Percentages of Base Wage (salary)					
			1	2	3			
Worker class	1							
	2							
	3							
	n-1							
	n							
Categories of ITR and employees	1							
	2							
	3							
	n-1							
	n							

For all the classes (categories) and levels of qualification standards in the form of regulations need to be drafted to regulate the requirements which workers must meet to earn the given class (category) and level of qualification. For example, VUZ graduates might qualify for Category I (if academic performance has been poor) and II (if academic performance was good). Then as length of service increases and the fixed factors improve, the category will rise in accordance with the requirements of the standards. The increments applied according to the levels of qualification must represent a substantial proportion of the worker's income. It is obvious that when the maximum increment (i) is received, the amount of the wage rate or salary (including the increment) must be higher than the base rate or salary of the next higher class or category. It should also be noted that in a new job the increments for levels of qualification are discontinued. They may be retained if the worker is being transferred to a new job to satisfy the interests of the enterprise. This will help to reduce personnel turnover.

In this situation not only would centralized state regulation of wages as a function of the class and category, which is extremely necessary in the context of socialist production, be preserved and strengthened, but enterprises would also be given an independence in establishing the ultimate level of wage rates (in accordance with the levels of qualification). At the same time the variable portion of wages would become more significant. And the bonus would

be used only to stimulate final results. Current and one-time bonuses would be aimed at achieving a saving on labor and physical resources, at increasing the volume of production, and at improvement of product quality.

The sources of incentives have great importance in setting up the system of financial work incentives. At machinebuilding enterprises there are essentially two sources which can be distinguished--the wage fund and funds formed from profit (above all the material incentive fund). The fixed factors in the quality of work must be stimulated out of the wage fund; that is, the size of the wage in accordance with the worker's class or category will be guaranteed by the state. The other components of his income (the increments based on levels of qualification, bonuses, piece-rate earnings, etc.) will be paid out of the unified material incentive fund; that is, in essence they will be credited to the workers of enterprises out of profit. The necessary amount of profit can in turn be obtained assuming certain success in performance, which will ensure a close functional relationship between the income of workers and the quantity and quality of the output.

The procedure for planning the wage fund will undergo change under the new conditions. It is no longer necessary to establish its total size for any particular period (the year, the month, and so on). Enterprises will receive only the planned standard allowance that corresponds to the wage rate (salary) of each worker. The wage (salary) called for in the schedule or scale will be paid from the wage fund to all workers participating in the production process on the basis of the standard allowance; that is, payment for the fixed factors in the quality of work is guaranteed by the state regardless of the size of the labor force. The increments for the variable factors will be paid out of the material incentive fund (profit), which results in operation with the optimum size of the labor force. This approach eliminates objectivity in distribution of wage funds among enterprises, places them in equal conditions with respect to the use of state resources, and guarantees distribution of wages (the base wage, bonuses, increments, and so on) according to the final result.

We can anticipate that the changes recommended in the wage and salary system would have a favorable impact on the volume of production, product quality, work discipline, and personnel turnover.

Once Again on Management of Labor Intensiveness: V. Bronshteyn, chief of the Socioeconomic Laboratory of the Irkutsk Radio Plant imeni 50-Letiye SSSR, candidate of economic sciences

The transition to the new conditions for remuneration and the need for enterprises themselves to earn the resources with which to raise salaries and wage rates, which were discussed in the article of V. Shcherbakov, compel us to return once again to a question which has been discussed more than once in the press and specifically in the pages of the journal SOTSIALISTICHESKIY TRUD.

The reference is to the management of labor intensiveness of products at the enterprise. After all, unless its reduction is intelligently stimulated, there is probably no point in speaking seriously about sources for additional remuneration of workers out of the enterprise's funds.

My personal experience in holding the positions of foreman, shop chief, and also in my present status, and the sociological research conducted by our laboratory make it possible to draw certain conclusions and make certain recommendations about this.

In our view the complicated job of revising quotas should be organized differently than is now done at most enterprises.

The first stage is for the manager of the enterprise to establish the planned figures for reduction of labor intensiveness by products and by shops. As a rule the size of the targets are in proportion to the growth of the volume of production over the planning period and to the percentage of fulfillment of output quotas. Then the senior work quota setter and shop chief first divide up the target assigned among the workshops and sections; it is not divided up according to any strictly formalized method, but often quite subjectively. An experienced manager usually takes into account the percentage of fulfillment of output quotas achieved by subdivisions and the level of the average wage, the average class assigned to job slots, the working conditions, the level of personnel turnover, the place which the section has in the technological "chain," and the length and service and age of personnel in the primary production collectives. After that the assignments for revising the quotas are cleared with the public organizations of the shops and made known to the foreman.

Even in this preparatory stage there is nervous strain caused by the desire of most managers to obtain a less strenuous assignment for reduction of labor intensiveness and the rise of labor productivity for their own subdivision, and that means a higher planned size of the labor force. Fulfillment of the assignment is a mandatory condition for ITR of shops to receive bonuses throughout the entire year. But the more difficult it is to fulfill, the greater the financial motivation which engineering and technical personnel have as a rule in reducing the target for reduction of labor intensiveness. For instance, 92 percent of the foremen asked noted that they would like to obtain an assignment for revision of quotas that was smaller than in the past year; only 8 percent objected to retaining the previous one. Not a single foreman or shop chief wanted a target that was higher than in the previous year.

Once the planned assignments have been approved, the main stage begins--actual conduct of the campaign to reduce labor intensiveness. In this stage all ITR have a financial motivation to revise the quotas speedily, since if they fail to meet the target, they will not be paid bonuses throughout the entire current year. The size of the piece-rate portion of a worker's wages is altogether determined by the level of unit rates and the number of components produced. Even though the bonus does depend on a number of factors, its size is still directly proportional to piece-rate earnings. Consequently, the size of the bonus also depends on the unit rates in effect.

The principal deficiency of the present system for distribution of the assignment for revision of quotas is that it is rigidly dependent upon the percentage of their overfulfillment. Consequently, the greater the efforts made by the collective and individual workers to raise labor productivity, the larger

the reduction of labor intensiveness they "get as a reward," so that they lose on income. And this when at the same time the decree of the USSR Council of Ministers and AUCCTU entitled "On Measures to Improve the Setting of Work Quotas in the Economy" strictly provides that the use of new procedures and progressive know-how by a worker (employee) or brigade on their own initiative and achievement of a high level of output on that basis shall not be the basis for revision of quotas during the period between certification of job slots.

In order to overcome this adverse aspect, which stands in the way of the rise of labor productivity, a multiannual assignment (3-5 years) should be established for revision of the quotas, and this assignment would not be corrected as a function of the percentage of overfulfillment.

Workers are not motivated to revise outdated quotas because the additional bonuses paid them from the material incentive fund for reduction of labor intensiveness are small. All kinds of compromises are adopted therefore. The most widespread of them is to offset the reduction of labor intensiveness by a proportional increase in the size of the bonus paid monthly. In this way the amount of overfulfillment of the quotas is reduced, but wages and labor productivity remain practically unchanged.

But this is not the only compromise. When an actual reduction of labor intensiveness, not just a formal one, is achieved, there may be opponents to revision of the quotas who do not want to work at the new unit rates. Out of fear of this approach, foremen quite often are forced to give a minimum assignment to those workers who have the greatest prestige and the most experience and who shape the public opinion of the primary production collective. The unfair distribution of assignments for revision of quotas was pointed out by 82 percent of the workers polled with less than 3 years' service, by 51 percent of the workers who had worked between 3 and 5 years, by 32 percent of the workers who had worked between 5 and 10 years, and by only 17 percent of the workers whose length of service was greater than 10 years at the same enterprise.

The saving achieved under the method now in effect from reducing the labor intensiveness at enterprises has almost no influence whatsoever on the size of the new target assigned to production collectives in subsequent years. When it is calculated, consideration is given as a rule to the percentage of overfulfillment of output quotas, the growth of output over the planning period, and the size of the reduction of labor intensiveness achieved in previous years. That is why a subdivision that revises its output quotas during the year, given the present practice of computing the economic benefit, will find itself in a less advantageous position than if it did this job all at once, at the beginning of the year. That is why a first and most important condition for improving the system of revision of output quotas is to change the method of computing the economic benefit from reduction of labor intensiveness. The period taken in the computation should not be 1 calendar year, but a longer period of 2 or 3 years or the 5-year planning period as a whole.

If the collective and every one of its members is to be motivated to perform this task, one of the principal conditions for payment of bonuses to every worker and to the entire primary production collective as a whole should be

fulfillment of the assignment for revision of outdated quotas given in advance for each month. If the incentives are organized in this way, financial motivation will be aimed at extending assistance to those workers whose turn has come for quota revision in the current month. Moreover, even they themselves will be motivated to do this job effectively, since the bonuses awarded to the entire collective depends on its results.

It would seem that the right way is not to pay the bonus not with respect to the piece-rate earning, but with respect to the base wage. Attention should in our view be paid to the proposal that a limit be put on the maximum possible size of the piece-rate portion of the wage. Moreover, the sole source for increasing it would now be a systematic supplemental awarding of bonuses for reduction of labor intensiveness. Such a bonus could be a weighty supplement to the maximum piece-rate earnings of workers. If we take into account that obtaining this supplement becomes the sole possibility for increasing the total size of earnings, then one can understand the financial motivation of the workers to revise output quotas.

The use of a regressive piece-rate system of remuneration can also guarantee that labor productivity grows faster than wages. When it is used, earnings over and above the envisaged maximum limit are credited at reduced unit rates, and a part of the savings achieved by using these unit rates could be committed to awarding bonuses to workers for reduction of labor intensiveness.

The overwhelming majority of the managers polled agree that there is a need to improve the system for reduction of labor intensiveness. At the same time, they also enumerated the basic difficulties that stand in the way of doing this job. First among them is the low level of multiannual technical-and-economic planning in the sectors to which the enterprises surveyed belong. Many enterprise managers are not firmly convinced of the stability of the indicators assigned for the 5-year period, and they are moreover convinced that the principal planning indicators will be altered repeatedly. That is why nothing is to be gained from looking to them in performing such a time-consuming job as multiannual calculation of assignments for the rise of labor productivity in a breakdown for all products, shops, production sections, brigades, and work stations.

There is also another reason why many managers are not in a hurry to improve the manifestly outdated system of material incentives. It lies in the fact that given the situation today with labor resources, they are not motivated to achieve a strict correspondence between the level of the wage and the quality of the work of production collectives, since a high level of wages, when the quality of work is comparatively low, quite often makes it easier to solve an annoying problem like the drain of personnel.

If this adversity is to be eliminated, it is important to overcome the departmental separateness of enterprises and at the same time to improve the system of incentives at most enterprises in every region. Moreover, greater vigor should be shown in applying measures aimed at stabilizing work collectives, including those which are financial in nature. The performance of these measures should make provision for eliminating the situation in which those who

move from job to job accomplish a financial gain by quitting, seeking, and quite often finding a job where with a minimum length of service they can obtain a wage which is not justified by the quantity and quality of the work they give.

The following practical recommendations for improvement of the process of revising quotas at industrial enterprises can be formulated on the basis of what we have said above.

In order to instill financial motivation in workers to seek out and utilize potential for raising production efficiency, it is best to draft assignments for reduction of the labor intensiveness of products and for the rise of labor productivity to extend over the next 3-5 years for every collective.

Determination of the economic benefit from revision of the quotas must not be confined to the "rigid limits" of the current calendar year, as is now the case.

Bonus regulations should make provision for payment of an individual monthly bonus as a function of fulfillment of the assignment for revision of the quotas by the primary production collective.

Large-scale simultaneous reduction of labor intensiveness must give way to the planned improvement of work norms that will guarantee the individual approach to every worker.

It would be good to have widespread certification and fundamentally new systems of remuneration that would guarantee that labor productivity rises faster than wages without revising unit piece rates.

It seems to us that performance of the measures proposed will help to create the conditions for raising wage-rate schedules and salary scales from the resources of enterprises.

Supplements Based on Working Conditions: E. Yarin, Rubtsovsk

As is well known, workers in machinebuilding and a number of other branches of industry are being paid at three different levels of wage rates depending on working conditions. Standard lists of occupations and jobs with heavy and harmful, especially heavy and especially harmful working conditions have been approved and are used as the basis for paying workers at the higher wage rates.

This procedure does not take into account the actual state of working conditions at the work station. As a result workers in the same occupation doing work under different working conditions are paid at one and the same rates.

By contrast with the system in effect, the article entitled "The Unit of Measurement of Work and Payment for It" proposes that differentiated supplements to the wages be paid after the experience of VAZ. The transition from the higher remuneration to the supplements, which would be instituted as a function of the actual working conditions at the work station, will make it

possible to eliminate leveling in the remuneration of workers who work under conditions that diverge in varying degrees from normal conditions. Enterprises would have an incentive to make a purposive effort to improve working conditions.

But when the regulation on evaluation of working conditions at work stations and the scale of supplements is drafted, it should be taken into account that the level of departure of working conditions from the normal state varies from enterprise to enterprise even when they have the same production configuration. That is why it would be incorrect to establish the same percentage of supplements for all machinebuilding enterprises, for example, those which are up-to-date and those which were built in the years of the first 5-year plans.

Experience shows that if leveling is allowed in the remuneration of workers employed under different conditions and insufficient compensation is paid for work involving heavy and harmful working conditions, adverse consequences are inevitable. This must be taken into account when the supplements for working conditions are established. As normal conditions are brought about, the size of the supplements must be reduced.

Better Preparation for Introducing the New Wage and Salary System: A. Meshcheryakov, Kazan

The way it has happened, I have had occasion to change jobs several times in my life. First I was a worker in a woodworking section, then an economist in an artificial leather shop, at a chemical enterprise, and then in a cost-accounting machinebuilding design office, an enterprise for repairing power engineering equipment, and an integrated consumer service establishment. Different sectors and a different organization of work. At the same time, while participating as much as I could in the activity of the collectives, and while observing how people work and what they invest in the common cause and how they are paid for it, I came to certain general conclusions which I would like to share with the readers of the journal. I was aroused to do this by V. Shcherbakov's article. While understanding that my arguments are not all-inclusive and that they concern only individual principles that might be the basis for structuring a wage and salary system, I do hope that they can also be taken into account in adoption of the new wage and salary conditions.

It is stated in the article that new approaches to structuring the wage and salary system have been in preparation for testing in 60 associations of machinebuilding branches beginning in 1986. These are really large associations with a sound organization of production and highly qualified specialists. But there are also an immense number of small enterprises with fewer than, say, 3,000 workers. Here practical activity is quite often that of the craftsman working in a small workshop, and the purposes set for the branch are achieved with greater effort than at the progressive large enterprises.

Most of the bad moments in the work of an economist at such an enterprise occur, I think, mainly for the following reasons: because enterprise managers take a subjective attitude that is not in line with documentation on instructions and methods; because there is no clear and straightforward information

on the topic; and because of difficulties in working with people who bear no responsibility whatsoever for the enterprise's economic condition.

In order to clarify this I will give several examples and try to relate them to what I have learned from V. Shcherbakov's article.

The article states that a third group of rates has been envisaged for workers who create and debug new technology. Quite often the plans and measures of enterprises involve equipment models that have already been in operation, but are scheduled for additional installation in order to achieve extensive expansion of production. The problem for the economist is the difficulty in determining the relationship between this group of rates and that kind of equipment. It is possible that GOST's set forth this concept, but there was a full set of GOST's in only two of the five offices I have worked in, in one there was a highly specialized set, and in two there were none at all.

From the standpoint of the completeness of information at those enterprises it is difficult for an economist to gain access to such sources as the comments to the KZoT, lists of the qualifying conditions for benefits and compensation for work under harmful working conditions, collections of YeTKS and even instructions of ministries, one copy of which is delivered and often goes to that official who has least need for them. And I saw even intersector time standards in only one office, and then there was only one copy for several norms setters.

There are plans for applying higher wage rates for toolmakers and other shops involved in the preparation of production. But after all at those enterprises which do not have solid tool shops the toolmakers are not toolmakers at all, but stock clerks, bookkeepers, cleaning people, and so on. At one enterprise I saw a section being created for preparation of production (with a staff of 10) consisting of fitters in classes 3 through 5, who spent 70 percent of their worktime doing loading and unloading work for which they were paid the piece rate according to the schedule for machinebuilding.

V. Shcherbakov writes: "the higher rates apply to remuneration...of repair workers, setupmen, and other workers who attend...also other especially complicated, one-of-a-kind, and highly efficient equipment." These terms "other" and "highly efficient" provide a wonderful opportunity for applying the new rates to workers who do not deserve them at all. Out of "professional pride" products and services are in practice always considered "very complicated" and "particularly complicated" in a sectoral breakdown. In a design office which is building an experimental lot of devices, they consider them complicated since no one has made them before. In the repair of power engineering equipment they consider boilers and turbines from the thirties and forties particularly complicated, since they are being repaired where it is hot and dirty, and so on. And even a nut can become particularly complicated if the thread is cut not with a tap, but with a cutter by a worker with a second-class rating on a DIP-"500" machine. In the attempt to find analogues for determining the complexity of an article one notices in the instructive documentation that the list is very short. To determine the significance of the equipment involved one needs a very large stock of technical documentation, but there is

nowhere to get it from. As a result the average wage paid to workers is approximately the same though the complexity of their work differs.

About the proposed introduction of the eight-class wage system. It has now become widespread to ignore the classes from 1 to 4. The third class in any occupation is awarded when one is hired and no one looks at what a man did or where he worked. In cases when the workbook already contains the entry "fourth-class fitter and repairman," the worker can be hired as a fourth-class electrician for repairing electrical equipment, a fourth-class painter and plasterer, a fourth-class carpenter, and so on, and if the enterprise manager has decided to deceive the superintendent of the laboratory building, and there is no limit, then they will write to the superintendent: fifth-class duty electrician. And how many cleaning people, stock clerks, timekeepers, and typists are included among laboratory assistants, fitters, and fixers! They will all be among the first to get the higher classes.

In the sewn garment subdivisions of Minbyt an occupation is referred to as a "self-cutter." It turned out that this referred to a tailor who did his own cutting or a cutter who did his own sewing, and at the same time it was not every one of them that could actually do the work envisaged by the TKS. All of this evokes suspicion that the eight-class system might result in neglect of classes 5 and 6.

A number of aspects of the new wage and salary system are related to the certification of job slots. But, however bitter it might be, in most cases the certification is a formality. I have participated in preparations for certification at an enterprise repairing power engineering equipment. The order from the higher-level organization gave about half a year for a deadline, and they did not even send along the method, but simply instructed that we were to be guided by the one published in EKONOMICHESKAYA GAZETA. When we familiarized ourselves with that method, it turned out that we had practically none of the normative documents mentioned in it and no one knew where to get them. And most of those who are to carry out the certification cannot use this documentation because of their poor professional training. As a consequence no one concerned himself with this matter for half a year. I did not even hear certification mentioned in the consumer service combine. Given that situation, won't the linkage of remuneration to certification come down to a mere formality?

Even in the very text of the article: "A system is to be set up for remuneration of the various categories of engineering and technical personnel. Here preference will be given to foremen, chiefs of sections and shops, designers, process engineers, and personnel of the quality inspection department."

Since establishment of the limits on staff size and appropriations for administrative and managerial personnel, the number of foremen, process engineers, and designers has been growing like a snowball. I have been in a plant where the planning and design office had a staff of about 50. When there was a drive to increase the number of designers, they also set up a special design office at the plant with a staff of 100 and salaries far higher than those in the PKO. Work begins with compiling the plan, and the lads from the OKB, who

didn't think about it very long, took the plan of the PKO as their basis. You can just imagine how hard they worked!

In the artificial leather shop there was 1 foreman for every 8-10 workers, in the repair of power engineering equipment 1 for every 7-8 workers (and they set the task of increasing it to 1 for every 4-5 workers), and in addition there were brigade leaders as well. At my last job they went even further-- 1 senior foreman for every 4-6 workers or 1 senior foreman and 2 ordinary foremen for every 10-15 workers.

At enterprises like that only some of the process engineers really deserve the name, while others are supply people, estimators, builders, dispatchers, people with political duties, and people who do nothing but run errands for someone else. I think back to the last office, in which there were only 10 process engineers in a staff of 100, and in half a year's time only 1 process was produced taking up a single sheet of paper. It must be said that economists will not like the sight of salary raises for these "workers."

In conclusion I would like to say that I do not consider the present system of remuneration bad or backward, but because of purely subjective reasons it is not applied to the full breadth of its capabilities. The new system would not be insured against that either.

Moreover, I am convinced that the capabilities of enterprises must not be unrestricted, especially at the level I have been talking about. There has to be a sound framework for their activity provided for from above; it need not be the two parallels "minimum" and "maximum," but some kind of hexagon, just so there is a framework.

Our Comments on Readers' Letters

In the fifth issue of the journal for this year the editors published a survey entitled "Your Opinion, Reader?" on the key points in structuring the new wage and salary system. This brought in more than 70 responses from our readers--supervisory personnel and scientists, engineers and economists, foremen and private individuals. We called upon Yu. Shatyrenko, deputy chief of the Wages Department of USSR Goskomtrud, to comment on the letters to the editors.

The most important practical question of whether it is possible to raise wage rates 20-25 percent and salaries 25-30 percent exclusively from untapped internal potential without drawing upon centralized resources evoked differing responses from readers. A majority thought this could realistically be done. That was the opinion of V.A. Ivanov, chief of the Labor and Wages Department of the Administration of Upper Volga Trunk Oil Pipelines; of Yu.N. Sludnikov, chief of the Labor and Wages Department of "Glavyugtransgaz"; A.A. Shabelnik, general director of the Berdichev PO "Progress"; A.N. Chekanov, distinguished RSFSR economist and chief of the Labor and Wages Department of the PO "Tula-ugol"; and many others.

At the same time doubts were also expressed. Kh.B. Ozola, engineer at the Salatsgriva Fish Canning Plant, feels that their enterprise could find approximately half of the resources necessary. V.G. Kosnevich, chief economist of

the Gorkiy No 1 Meat Combine, reports that out of the 950,000 rubles needed they are looking for no more than 200,000 on their own, since the volume of their production is hardly growing at all. Z.A. Bayeva, senior engineer of the Labor and Wages Department of the Barnaul TETs-2, believes that all the resources should be allocated from the state budget for the electric power industry.

A group of readers points out that this measure can and should be done in principle, but that enterprises should have corresponding guarantees for formation of the resources for remuneration, guarantees that would have to be incorporated into the system of planning, which is in need of appropriate restructuring.

Here is what can be said on this question. As noted at the 27th CPSU Congress and the June (1986) Plenum of the CPSU Central Committee, the new wage rates and salaries will be introduced in a fundamentally new way. Their principal distinguishing feature is that the funds necessary will be sought from internal sources.

The point is that in the present stage the organization of wages is not meeting the requirements of the country's accelerated economic development. The need for a revamping in this area is dictated by the conversion of the production branches to the new methods of economic activity. The essence of the new methods is a significant expansion of the rights of enterprises in organizing production and their "earning" the resources they need, including the resources for remuneration, on the basis of stable standard economic allowances. Wages must correspondingly be so oriented as to stimulate the workers within the limits of those resources and on the basis of the needs of the enterprises.

The present principle of leveling in remuneration is in large part created because the wage fund is planned from the level already achieved, i.e., on the basis of the current average wage. Of course, within the limits of that fund the enterprise is restricted in its opportunities to somehow change its level of wages. As a consequence wages are not well correlated to specific aspects of work performance.

The task is to give enterprises a reliable mechanism for organizing wages that makes it possible for every worker to receive within the limits of the resources earned by the collective an unlimited amount on the basis of each one's individual contribution to the overall results. Here society must be convinced that the growth of wages will not exceed the growth rates of labor productivity.

That is the basis for the intended establishment in 1987 of standard rates for formation of the wage fund for all enterprises in the production sphere independently of whether the branch has been converted to the new methods of economic activity or not. These standard rates will be established for the 5-year planning period and will not be changed during that period. Thus enterprises have been given a guarantee for formation of the wage fund.

The wage fund earned by enterprises by increasing the volume of production is an important source for introducing the new wages and salaries. If they fulfill the targets of the 5-year period for the growth of volume, enterprises in manufacturing branches will be practically guaranteed the necessary resources. That is, of course, on the average. There is no question that individual enterprises and indeed even entire branches will have differing capabilities in this respect.

But all branches and all enterprises can improve the structure of wages. Specifically: by improving the setting of work quotas so that a large portion of the piece-rate earnings of piece-rate workers are covered by the schedules and by including in the wage rates and salaries bonuses and various supplements and increments which have lost their value as incentives.

Finally, there is an opportunity to reduce the size of the labor force everywhere. According to our calculations, enterprises will seek 42.3 percent of all the resources needed by improving the structure of wages and the setting of output quotas, 15.7 percent by above-plan growth of the volume of production, 32.2 percent by reducing the number of personnel, and 8.9 percent by calling upon a portion of the resources of the material incentive fund.

This requires a reduction of about 5 percent of the labor force in the production branches as a whole, which is quite realistic. We already have the experience of the Belorussian Railroad, where in order to achieve a saving on the wage fund 12,000 out of a labor force of 100,000 were made available for other work.

More than 150 enterprises in different branches made corresponding calculations during preparation of recommendations on the new wage and salary system. Even now all the calculations and preparatory measures have been done at enterprises with an aggregate labor force of about 2 million persons.

Of course, there will be enterprises which according to the preliminary calculations will not be able to find the resources necessary. But it should be borne in mind that the new wages and salaries will be introduced as enterprises become ready, i.e., there will be a certain competitiveness. In this situation work collectives will be quicker to exert the relevant pressure on the management of enterprises so that the necessary internal potential is sought out. In any case it must be clear that there is no point in waiting for additional resources from the state.

N.D. Podosenov of Tula noted in his letter, correctly in our view, that now it is not so much a question of raising wages as of introducing the new wage and salary system, which must serve as the basis for a subsequent growth of wages as operating efficiency increases. The same thought was expressed by V.S. Orlov of Kostroma.

We cannot but concur with the opinion of A.Ye. Zhigalev of Zlatoust, personnel of the Labor and Wages Department of the Krasnoyarsk Fleet Repair and Operations Base, and specialists of "Ukrenergochermet" to the effect that enterprises have differing amounts of unused potential and that those which have a

smaller amount will prove to be in a worse position. Yes, that is actually the case. For a rather long time it has simply been disadvantageous for enterprises to reveal all the unused potential and to adopt strenuous plans. Artificial incentive measures (a small growth of transfers to incentive funds) did not outweigh fears of ending up in a difficult position when planning is based on what has already been achieved. Now the situation is undergoing radical change. The normative methods of planning place everyone in the same conditions. As for the difference "at the starting line," it is difficult to imagine any mechanism that would eliminate it overnight, as they say.

Probably the question was not well put as to whose wages and salaries should be raised first. For instance, K. Rybakov of Abakan feels that the wage rates of all workers need to be raised. We concur in that, but what we had in mind was who should be given preference, that is, whose rates should be raised by a larger proportion than others? Most readers concur in the opinion that the rates of the highly skilled workers should be raised the most. Specialists of "Ukrenergochermet" feel that there should be no changes in present relations and that rates should be raised equally for all workers.

At the same time Kh.B. Ozola, the personnel of the Labor and Wages Department of the Krasnoyarsk Fleet Repair and Operations Base, V.S. Orlov, T.A. Marinina, chief economist of the Borodino Loading and Transport Administration of the PO "Krasnoyarskugol," and certain others feel that the rates should be raised first and most for low-income workers, since the highly skilled workers even now have an acceptable level of income. We agree completely with the opinion of Ye.A. Guseva, engineer-economist of Vilnius, to the effect that "operations requiring low skill and unattractive operations should be mechanized, conditions should be improved, technology should be perfected, and as many people as possible should be eliminated from those ranks in that way, rather than taking the easier way of raising wages in those operations. Those will be temporary measures." One can only add that raising wages for unskilled operations guarantees personnel for those operations and puts the problem in mothballs. Every worker has to understand that if he wants more wages in his hands he must improve his qualifications, productivity, and the quality of his work; that is, the wages of a man who now does unskilled work must increase not because society has shown concern for him, but on the basis of mechanization of those operations and correspondingly more skilled, productive, and highly paid work.

Readers are unanimous in the opinion that the salaries of foremen and engineers should be set somewhat higher than the wage rates of highly skilled workers. They differ only in the size of that difference. But the averaged opinion coincides with the basic principle of the kind of equalization in effect at the present time: the engineer's salary would be set at the level of the wage rate of a worker in class 5 or 6, since the time required for the training of the two specialists is approximately the same.

All readers also feel that the present spread of salaries from position to position is small and does not afford opportunities for correct and proper appreciation of the ability of personnel to do their work. G.S. Sinyagin, a graduate student in the School of Economics at Leningrad University, even

favors establishment of only a minimum level of salaries for each position. Some comrades, advocating a broad spread, propose that this be achieved by moving its limits both upward and downward.

It would probably be wrong to lower the minimum salary of an engineer, especially in view of the intended rise of the wage rates of workers. It also needs to be borne in mind that the very decision taken about the salaries of personnel in the educational system calls for a minimum salary of 130 rubles per month for a teacher with higher education. That same minimum salary has also been projected for physicians. In industry right now the minimum salary of an engineer is 95 rubles. We consider it advisable to raise this to 130 rubles as well. Then throughout the country there would be a single reference point--the minimum salary of a specialist with higher education.

The salary spread for each position, as the readers propose, ought to be envisaged at a level of 40-50 rubles. Moreover, if the spread is to work effectively, the limit on the aggregate level of average salaries for the staff roster has to be removed.

The opinion of Yu.N. Korovkin, deputy chief of the Labor and Wages Department of the Belebey "Avtonormal" Plant, to the effect that within the limits of the spread salaries should not only be raised, but also lowered as a function of the specialist's performance, seems quite correct.

On the whole reader opinion comes down to the belief that the spread for all positions held by specialists should allow for a quite significant differentiation of their pay depending on their attitude toward their work, so that creative workers who show initiative would earn far more than those who do not fully apply themselves.

In our opinion the salary spread for specialists, beginning at 130 rubles, should have a range of approximately 100 rubles, and that would make it possible to perform the tasks referred to.

A majority of readers feel it is an important nonfinancial incentive to introduce skill categories for specialists, although V.S. Orlov, chief of the Wages and Labor Department of the Kostroma Power Machine Repair Plant, for example, believes that the spread is sufficiently broad for an incentive. That same opinion is held by A. Belozarov of the Sayan Aluminum Plant. We share the opinion of Comrade Yu.N. Korovkin that categorization will not only operate as a nonfinancial incentive, but will also make it possible to impose on specialists differentiated requirements as to the quality of their work.

It is also quite important that the designations "engineer," "Category II engineer," "Category I engineer," and "chief engineer" (similar designations will be provided for other specialists as well) be regarded as grades within the single position of engineer. It is accordingly the intention to free the enterprise of the requirement of maintaining certain numerical proportions among managers and senior and ordinary specialists. This in combination with the large salary spread, and also, as V.N. Saladey, docent at Kharkov Agricultural Institute, has pointed out quite correctly, with the measures to improve

certification of specialists, will in our opinion solve the problem of objective appraisal of engineering work and will help to enhance his prestige and increase his effectiveness.

The opinions of readers about the advisability of introducing an eight-class wage-rate system were divided. It can be said that our correspondents in the machinebuilding sector (except for Yu.N. Korovkin, Yu.F. Suslenkov, and A.A. Shabelnik, who feel that supplements for professional skill can be used to distinguish the best-qualified workers in their remuneration), who are now receiving the most recent sophisticated equipment for production, support this idea. The six-class system seems sufficient for a majority of representatives of other sectors. To be sure, even those who approve the eight-class system make the reservation that it must be invoked only on especially complicated and one-of-a-kind equipment and in the most responsible jobs. This position seems correct and sound. By responsible jobs we mean above all the work of toolmakers and those who set up and repair complicated equipment, machining centers, flexible machine systems, and automatic production lines.

The next question, which concerned the need to standardize various supplements and increments, did not arouse interest on the part of enterprise representatives. Practically all of them say that the present system is satisfactory for them. Yu.F. Suslenkov feels that this question does not need to be dealt with at all, since enterprises themselves can deal with it fully within the limits of their own resources. Comrade Belozеров points out that it is sufficient for only the upper limits of supplements to be set centrally, while the enterprise could fully determine the rest. He sent in as an example an interesting statute on establishment of supplements which is in effect at the Sayan Aluminum Plant.

We had something else in mind when we put that question. As a matter of fact, the system of supplements is not complicated for each individual enterprise, and it is widely used. The point is that one and the same question is dealt with differently within the sectors of the economy for one reason or another. For instance, supplements for professional skill of workers are in most branches fixed at 4, 8, or 12 percent of the wage rate of the worker's class, while in those branches that have been converted to the new methods of economic activity they are differentiated as a function of the worker's class. The criteria used in establishing them are also treated in different ways. The situation is still more confused with supplements applied to the salaries of specialists; they are simultaneously regulated by a whole series of decisions.

In short, the need has arisen to establish order here. The same opinion is held by the specialists of "Ukrenergochermet." A commitment has to be made to differentiating those supplements for professional skill which have justified themselves according to the class which the worker has earned, and the most important criterion for their application would be the quality of the product produced. In those months when the worker has allowed rejects to pass, these supplements would not be paid. If in general the quality of his work has deteriorated or he has not been fulfilling his production targets, they would be reduced or altogether eliminated. Here it would hardly be advisable to

differentiate the supplements by groups of enterprises with approximately equal organizational and technical conditions, as proposed by G.S. Sinyagin, graduate student at Leningrad University.

The same with specialists--introduce one type of supplement either for participation in a particular job, so long as it lasts, or for high achievements in work.

As for the argument to the effect that this question does not need to be dealt with at all, here we take the other point of view. Supplements occupy an intermediate position in earnings between the wage and salary rates and bonuses. On the one hand they are related to a worker's skill and are relatively stable, while on the other they depend on performance and may go down or be eliminated entirely. That is why the supplements, by analogy with wage and salary rates, should be regulated, but, like the payment of incentives, not strictly, but only with respect to their maximum size.

The opinion of readers is unanimous that the indicators used in categorization should be to a greater degree or predominantly oriented toward the technical level of production, the quality of the product produced, and other efficiency indicators.

USSR Goskomtrud is now doing work in precisely that direction. However, in addition to changing the criteria used in categorization, which, of course, would take into account the specific nature of sectors and branches, we deem it necessary to make provision for an additional mechanism for pinpointing groups of enterprises with respect to remuneration. It is no secret that the limits of indicators from one related group to another are scattered so far that as a practical matter an enterprise has very little chance (unless there is some substantial expansion of production) of moving to a higher group. At the same time within a single group the enterprises differ widely both with respect to product quality and also with respect to the productivity of labor, and it is not always possible for the criteria to take this into account. That is why it would be advisable to grant ministries the right to single out with respect to the level of salaries the managers of enterprises which have been achieving the highest results in the branch. And to correspondingly reduce the salaries of managers of those enterprises which have not been fulfilling plans, have been producing products of low quality, and have been making poor use of equipment.

A majority of the readers who answered the question of how many groups are needed in remuneration of the supervisory personnel of enterprises feel that the present number should be reduced. Other opinions--held by V.S. Orlov and Z.A. Bayeva--come down to increasing the number of groups, since enterprises that differ greatly in size end up in the large groups without deserving it. On the other hand Kh.B. Ozola, M.A. Gerasimiyuk, and Yu.N. Sludnikov feel that 2-3-4 groups are sufficient.

These matters are not so simple as it seems at first. The point is that when the salaries of managers are differentiated according to a large number of groups and the set of management positions is established according to the

groups, we have the result that in the lower group the manager's salary proves to be only a bit better than the salary of a senior specialist. At such an enterprise it is not possible to create functional staff services, and it is therefore difficult to attract highly skilled personnel. The question is what such an enterprise is able to do and is there any point in preserving its independence? When the number of groups is too few (two or three) enterprises which are in fact unequal in their volume of operations and management functions are placed in the same position, and this is manifestly unfair.

At the same time, an excessive number of groups should probably be reduced: say, in machinebuilding under union jurisdiction it would be enough to have four or five groups instead of the present seven. Wherever the liquidation of very small enterprises is impossible, for example, in the food industry, the present number would be preserved. It is not advisable to increase the number of groups, thereby creating conditions for the existence of small and inefficient enterprises.

Readers give very warm support to the idea of making the transition from higher wage and salary rates to supplements for working conditions on the basis of certification of work stations, which in the general opinion will make it possible to be more objective and fair in taking into account the actual difference in working conditions and will give an additional impetus to carrying out systematic certification of work stations. At the same time V.G. Litvinov and Kh.B. Ozola feel that there is still a need to retain lists of harmful and especially harmful operations, while V.F. Glushenkov says that there is no reason at all to alter the pay adjusted for working conditions.

It is well known that the lists of heavy and harmful and especially heavy and harmful operations are very conservative and not very flexible; they do not react to actual changes in working conditions. This is understandable, since such changes do not take place all at once throughout the country, and if somewhere improvements have not been made in some occupation, this is enough for the workers in that occupation to receive higher rates everywhere. Enterprises are investing large resources to improve working conditions, but as a practical matter they cannot reduce the additional payments correspondingly because of the lists which are in effect.

The proposal has therefore been made that while the lists as a whole would be retained, enterprises would be granted the right within the limits of those lists to certify every work station and differentiate the proportions of supplements as a function of the actual conditions; that is, rather than setting them at 12 percent of the rate for harmful operations for all workers in a given occupation without exception, to set them at 4, 8, or again 12 percent, and sometimes not to assign those supplements at all if at a particular work station improvements have actually eliminated the harmfulness to human health.

Comrades V.A. Ivanov, Yu.N. Korovkin, V.G. Litvinov, and others feel that once the wage rates and salaries are raised, the present incentive measures for product quality will be sufficient. Comrades A.I. Shtayer, N.D. Podosenov, V.S. Orlov, Yu.N. Sludnikov, N.I. Karlin, and others propose in addition that those who produce rejects be demoted from one skill class to another and not be paid the supplements for professional skill and for high qualifications.

This question has been decided already. The decree of the CPSU Central Committee and USSR Council of Ministers adopted 17 May 1958 and entitled "Measures for Radical Improvement of Product Quality" provided that the classes of those producing rejects would be reduced for a period not to exceed 3 months (they would be reinstated in the class according to the same procedure used in achieving it in the first place), would not be paid supplements for professional skill in those months when they allow rejects, and the supplements would be entirely discontinued if quality drops off substantially. Similar norms will be envisaged (with certain supplements) in the new conditions of the rate schedules for remuneration.

The journal's last question, whether intersector differences in remuneration should on the whole be retained, was mainly given an affirmative answer.

In general a certain convergence is taking place in the conditions of remuneration based on wages and salaries. For instance, there are plans to strengthen uniformity in remuneration of workers in occupations which carry a job from start to finish (freight-handling operations, rail and truck shops, repair workers in most branches, and other workers who render services to the principal production operation), to establish a uniform salary scale for employees (typists, stenographers, and so on), a uniform minimum salary of specialists in manufacturing branches, and certain other measures. But the differences that exist, above all in the working conditions of workers in basic production operations, do not at present allow for abolishing such wide rates, say, of underground miners and fitters, steel foundry workers, and seamstresses, even though the level of skill is comparable. A difference is accordingly being retained in the level of salaries of specialists, which are being established in a certain proportion of the wage rates of workers. Aside from that, there is no question that a branch's significance from the standpoint of the national economy also plays a role and gives rise to the need for creating advantages for certain of the most important branches. That is why the draft plan for improvement of the wage and salary system mainly calls for retaining the present differentiation of wage-rate conditions between branches and sectors.

Aside from the responses to the questions proposed by the editors, readers also expressed a number of additional considerations and desires.

The proposal for either introducing an award for length of service or differentiating the rates as a function of the length of service was encountered rather frequently.

In our view this should not be done. Length of service has limited application and has been introduced on the one hand in order to reduce personnel turnover in those branches where this problem is most acute and on the other to create certain advantages in remuneration for those branches in order to attract personnel. If length of service were introduced everywhere, it would cease to have its effect as an incentive.

Some readers have touched upon the questions of the bonus system, the need to simplify it, the need for a closer relation to the results of work, and elimination of the restrictions that exist on the size of bonuses, especially in

view of the transition to the standard rate of formation of funds for remuneration. In principle we support all these proposals and we deem it important and necessary to realize them in practice simultaneously with the conversion of associations and enterprises in the production sphere to the new wage and salary conditions for remuneration.

And more about one letter which stood all by itself in the mail received by the editors. Comrade B. Kutyrev of Novosibirsk believes that the very idea of raising wage rates and salaries is wrong and even harmful, since it creates the idea of a substantial portion of the wage being guaranteed, though in essence it has not yet been earned. The introduction of the new wages and salaries from enterprises' own resources, in the opinion of Comrade Kutyrev, comes down to "pumping" resources from the state budget. V. Kutyrev feels that all workers should be guaranteed only the minimum of 70 rubles per month, and the rest should be earned, that is, the entire question should be reduced to the proper distribution of the resources earned by the collective among its members.

For all the appearance of being revolutionary, it seems to us that this conception is divorced from reality. It is not clear why a good wage and salary system can hinder the proper distribution of the resources earned. On the contrary, the entire experience of production brigades indicate that even when the method of distribution of the general wage is altogether open to choice, in one way or another the brigade uses the wage rate and timed work as its reference points. Only the wage and salary system makes it possible to keep the setting of work quotas at a sufficiently high level. Finally, this is the basis for state regulation of wages. In the context of a planned economy wage rates are essentially the most important instruments for guaranteeing throughout the state the principle of equal payment for equal work.

That is why we are convinced that the need to improve the wage and salary system is acute at present as it never has been before and that the ways of implementing it which have been proposed are realistic.

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CSO: 1828/20

LABOR

IMPACT OF LEGISLATION ON UNEARNED INCOME FELT

Moscow IZVESTIYA in Russian 28 Sep 86 p 2

[Interview with A. M. Rekunkov, general prosecutor of the USSR, by IZVESTIYA correspondent E. Parkhomovskiy: "Distortions Are Being Eliminated"; date and place not specified]

[Text] [Question] Aleksandr Mihaylovich, four months have passed since this paper published a conversation with you about the honest and dishonest ruble. Life has presented us with a number of concrete questions in the struggle with unearned income. The extremes and distortions in these questions have been stated in the articles "Ship It With Something Else!," "I'll Give You a Lift," "Law of the Market," "Anti-Bolsheviks," and others. Has the prosecutor's office adopted any measures to rectify this most complicated situation?

[Answer] We have carried out a number of organizational measures, including zonal meetings of prosecutors of the union and autonomous republics and meetings of the oblast prosecutors, at which all vital questions linked to certain extremes were examined in adopting a decree on the struggle with unearned income. All misunderstandings and absurdities that arose were analyzed fully. In particular, it was stated that if a driver is hauling people carrying agricultural products to market, this does not make him guilty of breaking the law. The law on unearned income is primarily in pursuit of malicious law breakers. This includes those we regard as bribe takers, swindlers, speculators, second-hand dealers, etc.

[Question] You mentioned second-hand dealers. They're active at markets. Don't honest people who've brought their products there fall prey in the heat of the moment?

[Answer] As to the market, it is a complex mechanism and requires a careful approach. We have to constantly study it, and if second-hand dealers are really unmasked, people who in their own interests influence prices and make up a special network of suppliers, then we have to decisively combat such people, and this we are doing. But this is so that the market won't experience an ebbing of products. And we must drive the violators away from illegal activities using legal methods. I assure you that by no means will we tolerate any violations of the law in regard to honest people who want to sell their own products.

[Question] Aleksandr Mikhaylovich, the editorial office has received a number of letters stating that drivers have ceased transporting people who "hitchhike" by the side of the road. In several instances if they take on people along the road then they charge them an exorbitant price for the risk. What can be done to counteract this practice of what, for all practical purposes, is really intensified extortion?

[Answer] First of all I must say that when adopting legislation on unearned income, the minister of internal affairs and I have issued a joint decree which precisely formulates how law enforcement organs are to act in accordance with the edict concerning who must conform to various kinds of sanctions. With regard to the question you've presented, I might say, that if there were sufficient buses on the routes and cargo hauling taxis, the citizens would not have to hitchhike by the side of the road. They'd get on the bus and go. If would be convenient and inexpensive. But after all, our country is massive, there are many inhabited areas that are too distant from regular bus lines and can only be reached by using kolkhoz and sovkhos vehicles as well as individual transportation.

[Question] In connection with this, would it not be necessary then to point out to law enforcement organs, in particular the state automobile inspection authorities, these circumstances?

[Answer] There are solid and well-defined decrees regarding this. From these decrees it follows that the driver must not bear the responsibility if he, deferring to some person, hauls something to its destination.

[Question] That is, if in this instance it's free. And if he receives, let's say, one ruble? They say that they won't give more than this in these cases.

[Answer] Yes, this concerns those instances when he receives a ruble. But now in a number of places this question is being resolved in another way. The drivers hand out coupons and with them they somehow provide tickets for their incidental passengers. On the coupons there is an amount. The driver takes the money from the citizen and puts it in the cash box of his own motor vehicle enterprise. A portion of this amount is then given to the driver.

[Question] By which orders, decrees and instructions is this being done?

[Answer] Generally this question has not yet been resolved legally. But it doesn't have to be this way. The matter depends on the abilities of the local soviets. The main thing is that everyone understands that the edict is aimed at malicious people who get rich, who try to snatch more, who deceive.....

[Question] I'd like to direct your attention to a letter received by our staff. Camera operator Kalibaba from the city of Zastavna in the Chernovtsy Oblast writes, "Our film circuit has four vehicles. Because we lack a repair service, I work, in addition to my regular duties, as a vehicle mechanic as well. In turn, the drivers, at my request, have hauled my household items or something else I might have needed. After the edict was issued on unearned income, the drivers refused to haul my potatoes from my vegetable garden. I

stopped fixing their vehicle, which has now stood idle in need of repair for two days. That's where we're at. We look at each other like wolves, but what really suffers are the interests of the state. Is this really what it's all about?"

[Answer] I think that this is simply a special case. The mutual relations between people, between people and organizations must remain humane. When one helps the other to correct something, like transporting his potatoes from his garden, really can this be considered a violation of some kind of law?

[Question] I think as you do. But apparently practice compels people in similar situations to avoid trouble.

[Answer] This happened because at the very outset in a number of places deviations were tolerated in the adoption of the edict. People proceeded along an easy path, cutting so-called corners. And they decided not to get to the bottom of these matters in view of the great complexity. As a result many people were dissatisfied. Apparently not everyone immediately understood, and still don't, the thought and significance of the law to combat unearned income.

[Question] I'd like to read you another letter signed by 49 residents of the village of Krasnoye in the Kushchevskiy Rayon of the Krasnodar Kray. They write, "Almost all of us work on a sovkhoz. On our plots along the farmstead we raise vegetables and fruits for our own needs. We sell our surplus. We repeatedly proposed to the corresponding local organizations to organize a collection point for people to purchase our agricultural products. However, our request remains unnoticed. In return every one of us has heard the accusations that we grow vegetables, fruits and flowers to grow rich. It turns out that we are all money grubbers and speculators. We have, they say, unearned income and in this we see the purpose of life. These accusations after issuance of the edict on unearned income have turned into threats and subsequently even into direct action. Many inhabitants have been fined 50 rubles by the administrative commission of the agricultural council for 'improper use of plots along the farmstead.' Several have had their lands cut even though the plots were all within the authorized standard. And so veteran of labor Belousov, who has four children and a wife on pension, has had a portion of his land lopped off. You know, his family practically makes a living off the garden plot."

[Answer] Well, of course, here we have an extreme case. What does "improper use of plots along the farmstead" mean? A person determines what he's going to grow on his plot and here there are no binding standards. If a man invests his labor to grow produce and then wants to sell it, no one can interfere. It's the business of the sovkhoz administration to help people in every way possible to realize such purposes.

[Question] If I understand you correctly, then it is necessary for the prosecutor's office in the Krasnodar Kray to look into the instance just mentioned and to restore legitimacy.

[Answer] Such an order will be authorized. And upon confirmation of the circumstances outlined in the collective letter, the situation will be corrected. The culprits in this extreme case will receive the corresponding punishment.

[Question] Well this will not only bring joy to the inhabitants of the village of Krasnoye but to those in other places where similar excesses have occurred. I'd like to acquaint you with a letter written by a teacher named Mironov from the city of Kirovakan in Armenia. He asks for a clarification of the decree from the Armenian Council of Ministers, published on 12 August 1936 in the republic's newspaper KOMMUNIST. The decree discusses changes in a number of the republic's regions in the make-up of personal subsidiary farms for sheep and goats with other types of animals like cows and pigs. "Meat, cheese and the milk of sheep," writes the letter's author, "from ancient times have been the traditional food not only of Armenians but of other peoples residing in Armenia. It's now impossible to buy mutton in the store, and beginning 1 November it will be even more difficult because by that time, as the decree requires, all sheep and goats maintained on personal farms in the 13 rayons in the republic, will be destroyed. Won't state and market trade be deprived of a certain amount of milk, meat, wool and hides?"

The editorial office has made a xerox copy of this decree for you as printed in the republic's newspaper. You can familiarize yourself with it and make the necessary conclusions.

[Answer] Yes, I see that this decree violated the rights of the citizens. And, it seems that it must be protested. We'll study this matter and do everything necessary. This matter is extremely important and serves as a very serious notice. Under all circumstances, before making some resolution in similar instances, we must decide with our citizens the draft of the resolution, and if they give their approval, you understand, then it will be more advantageous both to them and the state. Then we can count on the people's support. A decision not supported by the people is not a decision.

[Question] In this regard I'd like to ask you something else. There is a lot of talk about the forthcoming adoption of an edict on an inheritance tax. There are various rumors which in the beginning assumed that there would be taxation even on savings bank deposits and personal belongings. Then people began saying that personal belongings would not be counted in the inheritance if there were no disputes among the heirs and that only registered valuables like cars and homes would be included. Then they started saying that bank deposits would also be inherited according to a prior principle without taxation. All of this taken together is just rumor. But, after all, this matter is important to many citizens. Today millions of people have personal belongings of great worth and many elderly people have accumulated certain means. There are millions and millions of depositors. People write that their home, which they consider a member of the family, as a rule is built with the help (labor or money) of other family members. And a house turns out

to be an inherited belonging. Its cost, let's say, is more than 20,000 rubles. I took this number because now, when building a house costing more than 20,000 rubles, an income declaration must be made. And so, such a house becomes inheritable. What should be its tax? It's said that beyond this price threshold there will be a major tax leap. Doesn't it turn out that the grown children of the departed head of the household are paying a second time for expenses they've already paid? Why must they pay a one-time amount beyond all their financial means? After all, it took long years to build the house and, I dare say, they have to lay out for it even three times more than its cost all at once. How are we observing social justice here? How can we not be displeased by such extremes like those that took place after the unearned income edict was issued?

[Answer] The citizens need not fear. Neither their home, nor dacha or vehicle will be assessed with a higher tax. This is because much labor has been invested in it. The same can be said for saving accounts. These deposits are, as a rule, the fruits of many long years of work and savings from personal budgets. And suddenly these savings are affected. No, this has not been the case and won't be! Savings can in no way be curtailed especially by imposing some tax if they are a means of inheritance. It's very important to remove these fears and free people from dread that their interests will be violated. Honest people both in this matter and in the case of unearned income have nothing to fear.

[Question] As our conversation draws to an end I'd like to touch upon the question of earned and "unearned." Let's say that a roofer, in his spare time, receives an order to cover someone's roof. Can't he justifiably consider his income as earned? The same thing concerns joiners, carpenters, plasterers with whom citizens have a personal labor agreement. This season there has been a marked shortfall in such types of services.

[Answer] This work has never before and is not now considered illegal. A man offering his labor to another is justified in receiving a fixed rate of pay. No one has the right to call this unearned income.

[Question] Must the roofer or the carpenter declare his extra earnings to financial organs?

[Answer] Here you must bear one thing in mind. If this roofer or carpenter, for one reason or another, doesn't work and is professionally employed in his own trade, he must take a registered certificate to the financial organs and pay a tax. If this extra work is incidental and occurs in his spare time away from his job, it doesn't have to be registered and is not subject to taxation. But, in general, every registered joiner by means of deductions from his earnings participates in the formation of public funds. This might not be so important in an absolute financial sense but it is very important in helping to form social consciousness as well as the proper psychology for someone occupied in individual socially useful labor.

[Question] I think that it is very important that society realizes its own direct interests in increasing the flow of products and services that come from individual laborers. I think that any citizen's activity leading to this aim must be encouraged and welcomed.

[Answer] It is just for this purpose that the law on individual labor activities is aimed.

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LABOR

LEADERSHIP STYLE, LABOR COLLECTIVES' ROLE ANALYZED

PM121041 Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 86 (Signed to Press 5 Nov 86) pp 6, 7

[Article by author collective led by Doctors of Economic Sciences G. Popov and Ye. Smirnitkiy under the rubric "Restructuring of the Economic Mechanism": "Economic Leadership Cadres"]

[Excerpt] Style of Leadership

The implementation of the concept of the acceleration of Soviet society's socioeconomic development and the associated fundamental restructuring of the entire system of economic management demand the shaping of new thinking, of a new psychology of behavior and activity by cadres at all levels of economic management. New demands are made of methods of implementing the Leninist principle of democratic centralism.

The modern leader of a socialist collective is not just the representative of central organs of power but also the proxy of the collective heads and to which he is accountable. Today the leader must be not just an administrator but also a bearer of increasingly broad democratic principles in the management of social production and the collective's social development.

Increasingly great importance attaches to such an aspect of economic leadership style as socialist enterprise. This term embraces components like economic initiative, the ability to calculate, analyze, and utilize reserves for boosting production efficiency, and the desire to apply advanced forms of economic management.

The Leninist style of leadership is imbued with a creative and scientific approach toward all social processes and implacability toward manifestations of bureaucracy and formalism. This style is a balanced combination of ideological and political, moral and psychological, and professional organizational demands regarding the activity of management cadres and creates all the conditions for the restructuring of leadership in the direction of increased effectiveness and organic unity because initiative and discipline, enterprise and efficiency, specific professionalism and orientation toward major goals.

The cardinal restructuring of management organs' style of work presupposes an active and uncompromising struggle against sluggishness, inertia, bureaucracy, red tape, and the replacement of a real management process by the generation of paperwork, when document shuffling and the associated mania for meetings are transformed from management tools into a goal in themselves and create the appearance of "stormy activity."

Phenomena like careerism, window dressing, manic report writing, and the desire to embellish the real state of affairs and thus secure undeserved bonuses and other awards for oneself and one's subordinates are incompatible with the socialist way of life and the Leninist style of work. There can be no place in leadership posts for workers who are inclined to abuse their official position and to show conceit, rudeness, arrogance, and bureaucratic disregard of people's needs.

The intensification of management activity demands deep knowledge in the sphere of management science and the competent application of modern technological facilities, advanced methods, and processes of management labor. It is important to counter bureaucracy and red tape by means of working people's personal responsibility. A leader must be really responsible not just for decisions but also for any failure to take necessary measures falling within the bounds of his competence.

The Role of Labor Collectives

In conditions of complete financial autonomy there cannot be any doubt as regards the need to transfer the solution of questions concerning the appointment or replacement of the relevant contingent of leaders in a financially autonomous enterprise to that enterprise's collective.

It is expedient to vest the selection of economic leadership cadres to an enterprise (association) council, which could comprise leaders of the party, trade union, and Komsomol organizations and of people's control organs and enterprise workers who are deputies to soviets at various levels or have been elected to other higher-ranking public organs. Sectorial and territorial organs, planning and supply organs, and banking organizations could also be represented on the council. Above all, however, the council must include front-ranking workers, team council representatives, and labor veterans.

The council could confirm the results of direct elections of team leaders and other leaders, set up competition and certification commissions consisting of representatives of the administration and labor collective, and approve their decisions regarding middle-level leaders. Finally, it would be the council which would propose candidates for director to higher organs or examine proposed candidates. The council could monitor the correct functioning of the machinery for appointment to office, and in particular the observance of requirements regarding publicity, which presupposes notifying the collective without fail of candidates for inclusion in the pool (from which promotions are made), any vacancies, and any recommendations that have been received.

In this way the enterprise council, set up under the control of higher-ranking organs and periodically reconfirmed, will become a new way of combining centralized leadership with the independence of the financially autonomous link. As a result of this, instead of directly selecting leaders, the main feature of the activity of higher-ranking organs in this sphere will be to set up the labor collective council, monitor its work, and approve its proposals.

The proposed changes may seem very complex in comparison with the arbitrary "swift" appointment and transfer of leaders. But it is this complexity which will create a barrier to subjectivism and protectionism in the appointment of leaders and will prevent any unjustified release or transfer of economic managers who work efficiently.

In restructuring the system of work with cadres we must not jump the gun by introducing into cadre work elements and methods which are inconsistent with the existing management system. For example, the suggested evaluation of leaders, if introduced under the existing management system, will become a formality which will be as burdensome as the certification of specialists was to a considerable extent in all previous years. But the restructuring of the cadres system cannot be delayed, either, since the restructuring of the economic mechanism will be unable to yield the proper results without it.

Hence two most important and interconnected tasks arise. First, there is the selection of cadres in the period of preparation for and implementation of restructuring. It is important to discover and promote those who are able and willing to seek out, develop, and actively introduce economic methods of management and, on this basis, achieve growth of production efficiency.

Second, there is training. All management personnel must be trained in good time and thoroughly for work under new conditions and for the application of new methods of economic management.

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DEMOGRAPHY

PLANNING FOR 1989 ALL-UNION CENSUS NOTED

PM071607 Moscow SOVETSKAYA ROSSIYA in Russian 4 Nov 86 Second Edition p 1

["Specialist's Opinion" by P. Guzhvin, chief of the RSFSR Central Statistical Administration: "Country's Questionnaire"; first paragraph is editorial introduction]

[Text] In recent times all-union censuses of our country's population have been conducted regularly every decade. Active preparations have now begun for the 1989 census. Our correspondent asked the chief of the RSFSR Central Statistical Administration to speak about the upcoming all-union population census.

Planning of economic and social development under the conditions of socialism is conducted on a strictly scientific basis. And this means that it cannot be organized correctly without taking social and demographic characteristics into account. And population censuses are the chief source for ascertaining them. Six such censuses have been conducted over the years of Soviet power, the first in 1920 and the last in 1979. By decision of the government the next all-union population census will be conducted in 1989.

Both the significance of and the need for the upcoming census are particularly great. For the 27th CPSU Congress set the very important task of ensuring a close link between economic and social policy, because the ultimate goal of our efforts is the person, the improvement of his spiritual world, and the improvement of his life. In order to successfully resolve this task, it is necessary to have full and reliable information about the population--its social, sex, age, and national composition, level of education, marital status, and so forth. And only an all-union population census can provide this picture.

Our current work makes it possible to gain an idea of the social and demographic processes and even to ascertain trends and to a certain extent forecast them. The dynamism of modern demographic processes should be emphasized above all.

Thus, changes are occurring in the population's territorial distribution as a result of intensive migration. First, the proportion of cityfolk is growing constantly. In 1981 71 percent of the RSFSR population lived in cities, while

at the beginning of this year it was estimated that 73 percent did, and by the end of the decade we expect the proportion of cityfolk, to reach 74 percent. Second, the population of the republic's eastern regions is increasing constantly. Over the past 5 years it has increased 8 percent, compared with an average of only 3.5 percent for the federation.

The previously unfavorable sex and age structure of the population--a demographic echo of the last war--is gradually being overcome. For example, whereas in 1959 there were 1,242 women for every 1,000 men, last year there were 1,158 women. This favorable trend will continue. But more complex processes are taking place in the age structure. Over the past quarter-century the proportion of persons below employable age has fallen by 6 percent. At the same time, there has been an appreciable increase in the proportion of pensioners--they now make up approximately 18 percent of the republic's entire population. If you add to this the fact that today there are virtually no people left who are engaged only in housework and on private subsidiary plots, then it will become clear that we have essentially exhausted the free labor resources. And it is of fundamental importance to take this into account when drawing up plans and forecasts: There are now virtually no possibilities left for the national economy's extensive development, and its intensification must be carried out.

The intensive path of socioeconomic development presupposes precise knowledge of all its sources--and the population's characteristics are probably more important than full knowledge of raw material and semimanufacture resources. This is why accounting data based on current records are becoming inadequate. Absolutely precise data are needed. And in many instances only a population census can provide them.

The drawing up of the upcoming all-union population census program has not yet been completed. The Gosplan, the Academy of Sciences, the Finance Ministry, the State Committee for Labor and Social Problems, and other interested ministries, departments, and scientific organizations are participating in this work in addition to statistical organs. The program will be tested during a trial census and later finally approved. However, it can be said even now that it will ensure continuity with the programs of the previous censuses and, thus, the comparability of their results. As previously, precise data will be obtained on the population's distribution among the republics, krais, oblasts, okrugs, rayons, cities, and rural population centers and on the population's makeup in terms of sex, age, marital status, nationality, language, level of education, sources of means for existence, sectors of the national economy, type of occupation, social groups, and length of time at the place of permanent residence.

But the country's socioeconomic development also demands an answer to a number of new questions.

The 27 CPSU Congress, for example, set a task of exceptional social significance: to provide practically every Soviet family with separate housing--an apartment or individual house--by the year 2000. Therefore it is

extremely important to know the precise and quite detailed characteristics of the population's housing conditions.

The entire education system is now being restructured on the CPSU Central Committee's initiative. The restructuring has already begun in secondary general educational and vocational schools, and the system of higher and secondary specialized education will soon embark on it. As is known, this reform is not a short-term campaign, and both amplifications and amendments are possible in it. Therefore the program of the trial census includes a question on graduation from a vocational and technical educational institution, the answers to which will make it possible to determine the level of vocational training.

The trial census is one of the most important organizational and methodological measures in preparation for the 1989 universal population census. Its chief purpose is to approve the program of the upcoming all-union census and the formulation of individual questions and to determine the optimum ratio of census personnel to population. At the same time, the technological process of handling the census materials will be verified. The leading workers of the autonomous republic, kray, and oblast statistical administrations will acquire the necessary practical census experience.

Ten regions of the country with different natural, climatic, and geographic conditions and different demographic and socioeconomic characteristics of the population have been selected to conduct the trial census. They include four territories in our republic--the North Osetian ASSR's Pravoberezhnyy Rayon, Moscow Oblast's Istrinskiy Rayon, Novosibirsk Oblast's Iskitimskiy Rayon, and Perm City's Industrialnyy Rayon. The trial census will be conducted from 10 through 17 December of this year. In the RSFSR it will encompass more than 360,000 people.

A special feature of this trial census is the use of two variants of the layout of census sheets. In one of them it is proposed to obtain fuller information on the population's housing conditions.

The bulk of the preparatory work for the trial census has already been carried out--which has been ensured to a considerable degree by the active work of local soviet ispolkoms and census promotion commissions, which have been efficient and purposeful in resolving the tasks facing them. An important stage in the preparations has now been completed--the so-called "mass" census cadres, who have to be trained and placed in work sectors, have been selected and confirmed from among skilled enterprise and establishment workers.

Another no less important task to be resolved in the period remaining before the census is to carry out mass explanatory work among the population of the regions of the trial census on its significance, aims, and tasks, the procedure for conducting it, and the obligations of the population and the census personnel. The press, radio, television, and also lecturers, propagandists, agitators, and workers of party and soviet organs, trade union,

Komsomol, and other public organizations, and, of course, statistical organs have a great role here.

The organization of the all-union population census has been entrusted to statistical organs headed by the USSR Central Statistical Administration. The package of preparatory work is very great. Some of it demands the active participation of very different establishments and organizations. It is very important to make more precise the list of city settlements and ascertain more precisely their boundaries, to put in order street names and the numbering of districts, houses, and apartments, to make more precise schematic plans of cities and villages and maps of regions, and to verify the correctness and fullness of current population records.

On the whole, the preparations for the census have begun in an organized manner in the RSFSR.

At the same time, our checks show that proper significance is still not attached everywhere to the timely and qualitative fulfillment of priority preparatory work for the census. Serious shortcomings have been exposed in the address registries of city settlements in the Karelian, Komi, Mari, Mordovian, Dagestan, Chechen-Ingush, and Tuva Autonomous Republics, Altay and Krasnoyarsk Krays, and Ryazan, Voronezh, Astrakhan, Tomsk, Chita, and Magadan Oblasts.

You also cannot help noticing the slow pace of work on checking the completeness and correctness of population records on the territory of the Komi, Mordovian, and Kalmyk ASSR's, Stavropol Kray, and Novgorod, Pskov, Yaroslavl, Lipetsk, Astrakhan, Kurgan, Sverdlovsk, and Magadan Oblasts. Statistical organs, census promotion commissions, and the appropriate administrative and economic organs of the enumerated territories should take additional measures aimed at unconditionally fulfilling the priority preparatory measures for the census.

Information on the results of the future census will be given out in stages, as they are processed. Data on the population of republics, krays, oblasts, and cities will be published first.

I would like to point to one innovation. The census materials will be processed with the help of the latest computer technology. Certain technical devices have been developed specially for the needs of the census. For example, new optical readers will make it possible to enter the answers to a number of questions on the census sheet as standardized symbols and figures which will be "read" and "accepted" by computers. All this will make it possible to process the materials more quickly and make the results of the new all-union population census known more quickly.

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CIVIL AVIATION

PLANS FOR IMPROVING PASSENGER JET AERODYNAMICS

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 9, Sep 86 pp 26-29

[Article by Professor M. Nisht, doctor of technical sciences, under the rubric "Practical Aerodynamics for the Crew": "Prospects for Improving the Aerodynamics of Passenger Aircraft"]

[Text] The strategy of accelerating scientific and technical progress in civil aviation dictates the necessity for further all-round improvement and extension not only of aviation specialists' practical skills, but of their theoretical knowledge as well. It is not enough today for members of aircrews to have just high occupational skills in operating aviation equipment. They should be clearly oriented in the most complex theoretical matters, be well acquainted with all the processes and phenomena which accompany particular evolutions in aircraft, and thoroughly understand the problems of aerodynamics. Hence the editorial staff is beginning publication of a series of articles authored by prominent scientists and experienced specialists in the science and practice of aviation. They will examine the practical aerodynamics problems of most current interest and their effect on successful operation of modern airplanes and helicopters.

Our first article is on the prospects for improving the aerodynamics of passenger aircraft.

The problem of increasing aircraft economy and efficiency is placing new and more substantial demands today on the methods of designing and operating them, as well as on the search for the best ways of improving them aerodynamically.

The most important of these ways is the one involving study of the possibilities of improving aerodynamic characteristics, which include reducing the drag on an aircraft, increasing its load-carrying capabilities (lift), and improving its aerodynamic efficiency. These characteristics, in turn, are determined to a significant degree by the wing of an aircraft and its profile and configuration.



Figure 1. Parajirok-1, a multi-wing aircraft, designed by the author.
(Krylov Institute on Zolotarevsky Lane)

Key to Figure 1:

- Inset A: 1. Normal profile
2. Supercritical profile
- Inset (B): Cross section of basic wing and wing with leading edge extensions
- Inset (C): 1. Endplate fin
2. Whitcomb winglets
3. Vertical airfoil
- Inset (D): Side views for cruise and takeoff and landing
1. Slats
2. Highly efficient double-slotted flap
3. Krueger flap

As a rule, the profile has a rather strong influence on the extent of shock-wave drag which develops at high subsonic speeds. It is well known that the upper surface of an aircraft wing usually has a profile that is more convex in order to increase its lift capability. However, at a certain speed that is called the critical Mach number (M_{kr}), local velocities of airflow over the wing may become supersonic. As a result, a shock wave is formed on it and an additional drag, or so-called shock-wave drag, will appear. Aerodynamic efficiency declines sharply from this. In other words, the greater a wing's thickness-to-chord ratio, the lower the critical Mach number, and hence the increased shock-wave drag. How do we reduce it and increase the critical Mach number at high subsonic speeds? A supercritical wing profile is applied to modern aircraft for this (Figure 1, A).

The supercritical wing profile (2) differs from the customary profile (1) in that it has a flatter upper surface. The airstream is accelerated to a lesser degree in flowing over it. For this reason, the shock wave, and consequently shock-wave drag, will appear at a higher Mach number. As a result, the critical Mach number is increased (Figure 2). Studies show that with the same thickness-to-chord ratio, application of a supercritical wing profile makes it possible to increase the critical Mach number by 0.07 to 0.08. The shock wave is shifted in this case toward the wing's trailing edge, which increases the area of rarefaction in the airflow on the upper surface and improves the wing's lift capability.



- Key: 1) Critical Mach numbers
1. Normal profile
2. Supercritical profile

Рис. 2.
1 — обычный профиль 2 — сверхкритический.

Figure 2.

It is clear from Figure 1A that with a flatter upper surface the supercritical wing profile has a more convex lower surface, and consequently a negative camber. This inevitably leads to a loss in lift when the Mach number is less than the critical Mach number. In order to overcome this disadvantage, the trailing edge assembly in a supercritical wing profile is turned down in the form of a small flap (See Figure 1A).

As we see, the supercritical wing profile has higher lift capability and provides more lift with the same angles of attack, which makes it possible to reduce the area of the wing and tailplane, as well as to reduce drag. It has its disadvantage, however. The degree of curvature in such a profile creates significant adverse pitching moments (in diving) in relation to the aircraft's center of gravity. To counter them in trimming the aircraft, considerable negative lift is required on the tailplane, which in turn requires an increase in lift by the wing and leads to a certain increase in drag, which reduces the effect from using a wing with a supercritical profile.

Aerodynamic characteristics also depend to a significant extent on the wing configuration, primarily on its span and sweepback angle. Let us put it this way: a very long wing without sweepback has a lower critical Mach number, but increased shock-wave drag. For this reason, it became necessary to shorten the length of the wing and increase its sweepback for flights at high subsonic speeds. But on the other hand, this results in some loss of lift, and consequently, degradation of an aircraft's takeoff and landing characteristics and its aerodynamic efficiency.

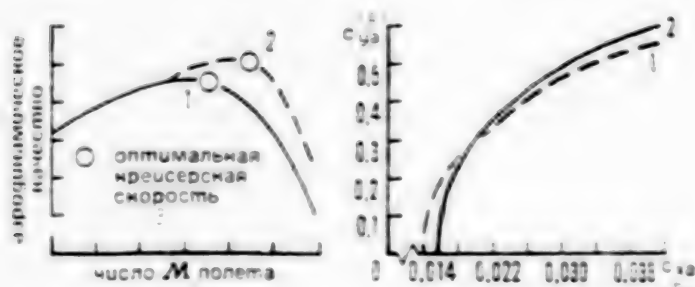
Use of the supercritical wing profile makes it possible to extend the wing by nearly 30 percent by increasing the thickness-to-chord ratio and decreasing the angle of sweepback. At the same time, the aerodynamic qualities and takeoff and landing characteristics of the aircraft are improved by 10 to 15 percent. There is also another modification to improve them. In particular, by changing the wing configuration. I mean reducing the thickness-to-chord ratio and increasing the wingspan at the same time, and consequently, the critical Mach number.

The possibility of extending the wing root section forward to create so-called leading edge extensions is being studied to improve the aerodynamics of civil aviation aircraft (Figure 1B). This modification decreases the wing's thickness-to-chord ratio and camber (by increasing the chords), extends it (by expanding the area with the same span), and increases the sweepback. As a result, the critical Mach number and aerodynamic efficiency in the cruise mode are increased (Figure 3).

However, all these improvements which are expedient from the viewpoint of the struggle against the wing's shock-wave drag lead to an increase in its induced drag. It is well-known that it makes up 35 to 45 percent of total drag. What contributes to its appearance? For one thing, wingtip vortices from the overflow of air caused by the pressure difference between the lower and upper surfaces of the wingtips. Secondly, the decrease in suction on the wing's leading edge when flow rarefaction is reduced on it.

The use of airfoils on the wingtips is a promising development here. We know of several design proposals in this connection (Figure 1C): the typical endplate fins (1), the Whitcomb winglets (2), the vertical airfoils (3) and others. They are called upon to disperse the wingtip vortices and weaken their intensity, thereby reducing induced drag (Figure 4). Moreover, the airflow at the wingtips which acts on these surfaces creates a component of aerodynamic force directed ahead, reducing induced drag in addition.

Studies show that by being comparatively light in weight and small in area, the wingtip airfoils make it possible to reduce induced drag by nearly 15 percent. The advantage of these surfaces is that the aerodynamic force arm which they create is very small and results in just a minor bending moment in the wing root (about 0.5 percent), whereas an equivalent extension of the wing would lead to a much higher increase in the bending moment (more than 8 percent). However, at low angles of attack (with small lift coefficient values [keyed as (A) in Figure 4]), the wingtip surfaces increase friction drag somewhat (the drag coefficient [keyed as (B) in Figure 4]).



Key to Figure 1:

- (1) Aerodynamic efficiency
- (2) Mach number
- (3) Optimum cruising speed
- 1. Without leading edge extension
- 2. With leading edge extension

Key to Figure 4:

- (A) Lift coefficient
- (B) Drag coefficient
- 1. Without wingtip airfoils
- 2. With wingtip airfoils

When a turbulent boundary layer is present on the surface of an aircraft, the friction drag constitutes about half of all its drag in subsonic cruise flight. At the same time, a laminar boundary layer substantially reduces such drag. For this reason, laminar flow control of the surface has considerable potentiality for increasing an aircraft's aerodynamic efficiency in cruise flight, which makes it possible to increase its aerodynamic efficiency by more than 2.5 times as much. Research directed at providing laminar flow control of an aircraft's surface in cruise flight is now under way. It is being conducted basically in two directions: development of wing profiles with the maximum number of areas for laminar flow control (natural laminarization) and creation of a system for controlling laminar flow by boundary layer suction (artificial laminarization).

Let us examine the potentialities of the first direction, which are already being utilized in practice, in more detail.

Natural boundary layer laminarization may be achieved on a specific part of the wing surface. The dimensionless coordinate of the point of a laminar boundary layer's transition into a turbulent one in a given section of a wing with the chord "b" is determined according to the formula:

$$\frac{x_T}{b} = \frac{Re_{cr}}{Re}$$

Here (1) is the coordinate of the point of transition, (2) is the critical Reynolds number, and (3) is the Reynolds number in the given wing section. The larger the size of an aircraft and the faster its flying speed, the larger the Reynolds number (3), and hence the spread of the turbulent boundary layer as well.

The transition point position may be affected by a change in the critical Reynolds number. In this case, the surface roughness, acoustical disturbances, a positive pressure gradient and other factors exert an influence.

Special laminar-flow profiles, which are rather thin, smooth sections with a section of maximum thickness shifted to the rear, are used to retain laminar flow around the wing--the relative coordinate equals 0.40 divided by 0.50. A negative pressure gradient is created from the leading edge of the profile to this section (the airflow is accelerated and the pressure is decreased), which contributes to retention of the laminar boundary layer. It is pointless to shift the section of maximum thickness farther back, inasmuch as the positive pressure gradient is increased in the rear part of the profile. As a result, flow separation and a sharp increase in pressure drag take place. If a laminar boundary layer is successfully retained on half of the wing chord, the quality of the aircraft's aerodynamics is increased by 25 to 30 percent.

Studies show that natural laminarization is achieved more easily on a wing with a longer span and moderate sweepback. At the same time, acoustic disturbances are reduced substantially if the engines are arranged as far as possible from its surface. High-lift devices on the leading edge contribute to the generation of boundary layer turbulence, which complicates the problem of natural laminarization on modern passenger aircraft which require powerful high-lift devices.

As pointed out above, the point is that the relative thickness and length of the wing have to be decreased and its sweepback increased to overcome the consequences of a shock stall. All this degrades the lift capability and consequently, the takeoff and landing characteristics of an aircraft. High-lift devices on the wing's trailing edge are utilized to improve them: various types of flaps. A simple flap is an assembly on the wing's trailing edge that is deflected downward at an angle of variation. At the same time, at a given angle of attack [(1) in Figure 5] the lift coefficient of the aircraft [(2) in

Figure 5] is increased. However, this increase is limited--an aerodynamic stall develops on the deflected flap and the effectiveness of the high-lift device is reduced.

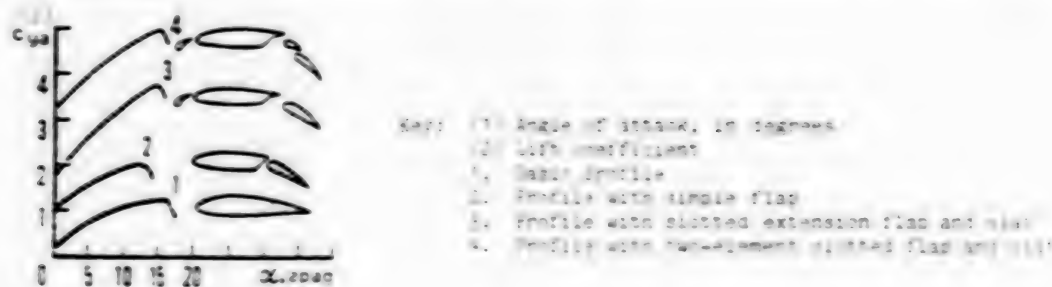


Figure 4.

To delay the aerodynamic stall at high angles, the flap is made extensible and slotted. The air flows over the slot from the lower to the upper surface of the wing at high velocity as if "blowing away" the boundary layer, which is one of the causes of the aerodynamic stall, from the flap. Another cause is the high positive gradient where the wing breaks off along the leading edge of the deflected flap. Flaps are made in multiple elements for the purpose of reducing this gradient (Figure 1D). Each element is deflected at a relatively small angle which ensures that the wing camber is changed more evenly. When two and more elements are available, the overall deflection of the flap turns out to be quite large (50-60 degrees) when the flow is unseparated. Multiple-element slotted flaps make it possible to reach lift coefficients that are quite high (Figure 5).

However, high positive pressure gradients are developed in the process on the leading edge, resulting in flow separation from the wing's upper surface and a decrease in the critical angle of attack and the lift coefficient (Figure 5) and degradation of moment characteristics. High-lift devices on the leading edge of the wing are utilized to put an end to the flow separation from the upper surface. Slat and Krueger flaps are in wide use on modern passenger aircraft precisely because of this (Figure 1D).

When the slat is deflected downward, a contoured slot is formed between it and the wing's leading edge, through which the air flows from the lower to the upper surface at high velocity and delays the flow separation. As a result, the critical angle of attack and the coefficient of maximum lift are increased (Figure 5).

The Krueger flap is deflected in front of the wing's lower panel. In the process, the approach flow is turned more smoothly on the leading edge and the flow separation is delayed at high angles of attack.

Utilization of the high-lift devices mentioned makes it possible to achieve the high lift coefficients necessary for takeoff and landing and to decrease the wing area required. And this in turn makes for less aircraft weight and drag in cruise flight.

Aerodynamic efficiency also can be increased by improved integration (unification) of the wing, fuselage and powerplant in a single lift system. This involves an integrated configuration which provides for the wing's smooth transition into the fuselage, which makes it possible to include it in the active process of creating lift, to reduce friction drag, increase the critical Mach number and reduce shock-wave drag at high subsonic speeds. In addition, such an integrated configuration makes it possible to free additional useful space and to use it for stowing fuel, let us say. The best placement of engine nacelles on the wing also provides a certain advantage in aerodynamic efficiency. Moreover, not parallel to the axis of the aircraft, but at shallow angles (horizontally and vertically). As an example, such a nacelle arrangement on the Il-86 provides the best conditions for air to flow around them in a disturbed flow of air from the wing.

Thus, modern aerodynamic science possesses the necessary means which enable us to improve the aerodynamic characteristics of civil aviation aircraft and to increase their flight efficiency on this basis.

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CIVIL AVIATION

DESIGNERS ON Ka-32 HELICOPTER DEVELOPMENT, PERFORMANCE

Moscow TEKNIKA--MOLODEZHI in Russian No 9, Sep 86 pp 30-34

[Interview with Sergey Viktorovich Mikheyev, chief designer of the Kamov Experimental Design Bureau and doctor of technical sciences; and his deputy, Veniamin Alekseyevich Kasyanikov, by TEKNIKA--MOLODEZHI correspondent Pavel Kolesnikov: "A Rotary-Wing Truck"]

[Text] The Ka-32 helicopter is a routine achievement by Soviet aircraft manufacturers. It was developed at the Experimental Design Bureau (imeni N. I. Kamov) under the supervision of Chief Designer S. Mikheyev, doctor of technical sciences and winner of the Lenin Prize. The new aircraft is not very large at all; on the contrary, it is perhaps the smallest in its "weight category." Yet the Ka-32 is a powerful helicopter with a coaxial configuration and a maximum takeoff weight of 12.6 tons. It is indeed small, but sturdy! It has practically no equals among helicopters in this class for load-carrying capacity, range and altitude.

Computerization of the on-board equipment has made it possible to endow the helicopter with unique potentialities. For example, the navigation system provides for automatic navigation on any route without the assistance of ground-based navigational aids--homing beacons and the like.

Our correspondent Pavel Kolesnikov met with the creator of the new Soviet helicopter, Chief Designer Sergey Viktorovich Mikheyev, and his deputy, Veniamin Alekseyevich Kasyanikov. Here is what they told us.

S. V. MIKHEYEV. The Ka-32 did not make its appearance suddenly or all at once. We worked on it for long years. Critical problems connected with opening up the Far North gave impetus to its development. And especially the transportation problem. I would remind you that the ships sailing the Northern Sea Route play the most important role in this region. The successful guidance of convoys depends completely on our icebreaker fleet--the most powerful in the world. But experience has shown that to navigate successfully in the ice, a captain and navigator should receive information on

ice conditions along the convoy's course, day and night, in all kinds of weather. The length of the maritime navigation period, and all navigation, depends to a large extent on the completeness, quality and regularity of this information. This is where the specialized ship-based helicopters prove to be indispensable for ice reconnaissance. By providing the ships with the necessary data, they are contributing to the successful conduct of navigation. And this alone completely justifies the development of a special helicopter. It is important only that it have the necessary range, be self-contained, and have practically all-weather capability. And the Ka-32 has just such a combination of qualities.

Our OKB [experimental design bureau] is familiar with the needs of service in the Arctic and understands them. So it is not coincidental that the Ka-32 occupies much less space on a deck than the lighter Mi-3, and our designers even thought of folding the main rotor blades for storage convenience.

Obviously, development of an ice reconnaissance aircraft is an important task, but only several dozen helicopters are enough for this purpose. Is it worth developing a new aircraft for such a small series? So we tried to find areas where it could be utilized on a large scale.

The first one that suggested itself was the unloading of ships while they are under way. As a "flying crane," the Ka-32 carries 5 tons of freight suspended externally (this is just the weight of a standard load container) for 80 kilometers. Let us assume that a ship convoy enters the 80-kilometer zone of a port and crosses it without reducing speed. In this time the helicopter is able to deliver quite a few containers to the shore, and not to the port warehouse, but directly to the consumer. Expensive? Most likely. But if the financial losses from ship layovers at intermediate unloading points along the entire route are taken into account, it becomes profitable. So the helicopter will help to save millions of rubles.

Next we analyzed the nature of freight transportable by helicopters over land. It turned out that a significant part of it weighs about 5 tons. At the same time, it is basically bulky equipment which cannot always be squeezed into a cargo cabin, but which is more efficiently carried by external suspension, especially if the distance is not over 100-150 kilometers. How is such freight transported by air today? The familiar Mi-3 lifts only 3 tons, and they are beginning to replace the more powerful Mi-6 with a new aircraft--the Mi-26, which lifts up to 20 tons. Carrying 5-ton loads (one by one!) on such a giant is not economical. So an economically expedient area for utilizing our Ka-32 was found. And this aircraft can provide millions of rubles in savings here.

A transport helicopter which delivers 5 tons suspended externally for a distance of 80 kilometers and 1.5 tons in its cabin for 600 kilometers, and these are the features of the Ka-32, is the best one for the national economy, in our view. And this resolved the question of developing a new helicopter.

Its high maneuverability and small overall dimensions make the helicopter indispensable for handling different tasks under mountain conditions--taking out timber, building LEP [power transmission lines], and mine rescue work.

The fuselage is basically made of aluminum alloys. It is equipped with three doors: on both sides for the crew and on the left side for the cargo cabin. The floor of the cargo cabin is equipped with tiedown fittings to secure a full load of up to 4 tons. The helicopter's capabilities may be extended with the use of a kit for bulky equipment.

[CORRESPONDENT] Yes, the aircraft is unique. But its uniqueness lies not in its exotic nature, but in the capabilities incorporated in the new helicopter which enable it to carry out a great number of different tasks. I think that just as the simple and reliable ZIS-5 (the famous "3-ton truck") became indispensable on the country's roads in its time, so now the rotary-wing truck will become an important link in the transportation system on the air routes. And even though the most complex advanced equipment, including on-board computers, has been installed in the Ka-32, it is noticeably simpler to maintain and fly. There is every basis to believe that the new helicopter will have a long working life.

[EDITORIAL STAFF] The Ka-32 helicopter is illustrated in a two-page spread in the magazine [not reproduced]. Figures identify the following: 1--cockpit; 2--the TV3-117 engines; 3--fiber glass blades of the main rotor; 4--main coaxial rotor shaft; 5--auxiliary fuel tank; 6--container for inflatable ballonets for emergency landing on water; 7--winch; 8--cargo cabin door; 9--antenna for the Doppler speed and drift sensor (DIS); and 10--vertical stabilizer.

Ka-32 HELICOPTER SPECIFICATIONS

Normal takeoff weight, in tons.....	11
Maximum takeoff weight, in tons.....	12.6
Maximum cargo weight, suspended externally, in tons.....	5
Maximum cargo weight inside cabin, in tons.....	4
Maximum speed, in kilometers per hour.....	250
Maximum cruising speed, in kilometers per hour.....	234
Static ceiling, in meters.....	3,400
Service ceiling, in meters.....	6,300
Maximum flight endurance, in hours.....	4.3
Cargo cabin dimensions, in meters.....	4.52 x 1.3 x 1.32
Seats in cockpit.....	3
Seats in cargo cabin.....	16
Length of helicopter with folded rotor blades, in meters.....	12.25
Width of helicopter with folded rotor blades, in meters.....	4

World records set in the Ka-32 by T. Zuyeva and N. Yeremina (1985): altitude without payload 8,250 meters; altitude with 2-ton load, 6,400 meters; and altitude with 1-ton load, 7,305 meters.

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MARITIME AND RIVER FLEETS

CRUISE SHIP 'TURKMENIYA' FIRE, RESCUE OPERATION DETAILED

Moscow VODNIY TRANSPORT in Russian 15 Nov 86 p 4

[Article by A. Mikhasevich: "They Performed Their Duty"]

[Text]. I met Seaman Alexander Antilov near the ship's ladder of the Turkmeniya motor vessel that was now docked at the first berth of the Nakhodka commercial port. We shook each other's hand firmly: We have known each other for several years; two months ago we were together on a trip when Intourist chartered the Turkmeniya. I peered closely at his face which was tired from lack of sleep, and at first I could not understand what had changed in it. Then I understood -- his beard, which had been jet black and the subject of jokes by the deck crew, had become grey. Here, on the berth, near the vessel that had been covered with wounds by a fire, with his comrades who had become his friends during the trip, we reconstructed the events of an alarming November night.

The maritime cruise of the participants in the Week of Children's Technical Creativity along the Primorye coast was coming to an end. A total of 240 young boys and girls, 22 group leaders, and representatives of the Kamovskiy kraykom and the kray station for young engineers had visited Nakhodka, Grabovskiy and Olga. In honor of the coming arrival in Vladivostok, the senior class was permitted to extend the discotheque party until midnight, and the young children were put to bed. Merriment and laughter reigned in the music salon, and service on the motor vessel was taking its normal course. The watch changed at midnight as prescribed. 1. Matusevich, the watch commander, instructed Seaman R. Gazizov, the watch fireman, and set off on his rounds. Third Mate S. Parusov handed over matters to the second navigator, V. Laptev. V. Zhilukhin, a diesel mechanic, and Yu. Isakov, a machinist, assumed the watch in the engine room. Based on a weather forecast, an increase in wind and a worsening of visibility was expected; and the ship stabilizers were turned on.

Subsequent events occurred with the speed of an express train; it was as if they were compressed into an instant that was filled with drama and suspense -- an instant whose cost was the life of hundreds of children.

... Let us descend with Yu. Isakov on the charred ladders to the engine room that is still illuminated by a single portable lamp.

He says: "A plug broke away on the fuel line -- a jet hit right on the burning hot manifold of the left main generator and blazed up like a torch. I immediately broke the glass and pressed the fire alarm button; I managed to expend two fire extinguishers. When we began to choke, the machinist and I darted into the auxiliary engine room and battened down the sliding door...."

On the bridge, they saw that the fire alarm had been operated: alarm No 84-- main engine room. Captain V. Klim was in the deck house in seconds. Everyone heard his calm voice over the intercom: "Attention, fire alarm! Damage-control party begin to reconnoiter and eliminate the center of the fire. Prepare life-saving equipment...."

We talk with Vladimir Georgiyevich in the dispensary of the Bars salvage and rescue vessel where part of the crew was temporarily accommodated.

The captain says: "We detected an increasing odor of smoke on the bridge. I understood that the fire had penetrated into the living and service spaces through the engine room's shafts. What to do? To concentrate all efforts on localizing the fire? I decided to first do everything possible for the safety and saving of the children -- there was no alternative"

The members of the damage-control party, which I. Matusevich -- the fire-fighting mate -- headed, were fighting the flames in the engine room. At the same time, the evacuation of passengers and of part of the crew was taking place. Having gotten up by the numbers determined by the life-boat alarm, the seamen acted correctly, in a coordinated manner, without panic and in a very organized way. The cabin attendants led the children from the spaces and cabins that had filled with acrid smoke. All of them, without exception, wore life jackets. According to eye-witness accounts, the children behaved with striking courage and calmness. None of the children cried, the older ones helped the younger ones to get dressed, they carried blankets.... In eight minutes the children were seated in the lifeboats which had been lowered to the level of the deck. They were carefully counted again and then the crew members took their places in the lifeboats and rafts; there were 65 women among them. In 15 minutes the floating equipment was lowered to the water. S. Tarasov, the motorboat's chief petty officer connected the boats into two trains so that the waves would not disperse them in different directions. A total of 29 people under the command of V. Klim remained on board the motor vessel. At that time, V. Shevtsov, the radio chief who had been transmitting the SOS, emerged from the puffs of acrid black smoke that had embraced the superstructure and bridge with a damp towel wound around his head.

The weather had sharply worsened. The rain was mixed with snow, and the seas had risen. Dozens of vessels, who had heard the signal, were already hurrying to the area of the disaster: the Pribaltika, Sovetskaya Buratiya and Rybak-Kamchatki tenders, salvage and rescue vessels.

In several hours, the Vazhgorsk seiner approached the lifeboats, and the fishermen and seamen lifted the children on board the small vessel using the storm ladders in the tossing seas without a single scratch on them -- to the last one. They gave them hot tea to drink, rubbed them down briskly, bundled them up, fed them, and tried to distract them from what had happened -- all of this in terrible silence but, really, not in resentment. The children were transferred in Nakhodka to the Priamurye and Antonina Nezhdanova motor vessels and delivered to Vladivostok where they were handed over to their parents at the maritime terminal. Those, who were from other towns, were given warm dry clothing and transported by bus to their residences in the cities and villages of the kray.

... On the Turkmeniya, the crew was fighting the fire. In the hermetically sealed engine room, machinists I. Bezeorodov, Yu. Larionov and I. Matusevich, dressed in breathing equipment and protective clothing, went into the fire again and again. Doctor V. Bogushev watched over them. He dragged up the closed system oxygen breathing devices and extinguishers, and provided the necessary medical help. After about 40 minutes, the flames were put out. The fire in the engine boiler room was eliminated about 0130 hours. However, it had already blazed up in the wardroom and near the command personnel's cabin. The portholes swelled and burst from the heat like soap bubbles. The supply of water stopped -- the cables, which fed the fire-fighting pumps, had burned through. Communist G. Kovalev, the electrical engineer and a quiet and hard working individual, put on a gas mask under the anxious eyes of his comrades and began to pick his way to the stern in order to lower himself from there into the engine room. They began to draw water with buckets and connected the hose to the drinking water.... In the infirmary, V. Bogushev gave Yu. Isakov milk as an antidote. Having rushed from the auxiliary engine room to the deck, the machinist climbed to the skylights of the engine and boiler room, connected a fire hose and cooled the metal for almost an hour in smothering smoke dressed in a sleeveless vest in the rain and snow....

G. Kovalev and the electrician who was helping him, were able to start the cooling pump of the main engine in pitch darkness and supply water to the fire main. They laid two fire hoses through the cabin of the chief engineer and third mate. At dawn, damage-control parties from the Kapitan Dublitskiy motor vessel, the Pribaltika tender, and the Tayfun salvage and rescue tug had arrived at the vessel.

By 0600 hours on 10 November, the vessel assumed a dangerous list because of the enormous amount of water that had been used to extinguish the fire; it became difficult to walk on the deck. They tried to level it, but carefully. The captain ordered everyone to leave the vessel. A foam attack was made from the Tayfun, whose crew was providing the main help, using the fire-fighting monitors. The fire receded. Seven crew members headed by V. Klim boarded the Turkmeniya and took in a tow; the USSR Ministry of the Fish Industry salvage and rescue vessel, the Predannyy, towed the vessel to Nakhodka against a 4-4.5 knot wind.

On 11 November, a departmental commission, which was faced with determining the causes of the accident, the degree of guilt, and the punishment measures for the specific people guilty of what happened and with estimating the material damages, began work. The bodies of two dead crew members were also found on 11 November. In an interview, V. Pervov, a member of the Ministry of the Maritime Fleet collegium, pointed out that it was still early to draw final conclusions and that a careful and thorough investigation, in which competent specialists are involved, is being conducted. However, the crew acted in a very organized and courageous way in a critical situation, thanks to this every last passenger was saved.

"It is now possible to debate and discuss for a long time why the plug broke off and whether the fire assistant and captain acted in accordance with instructions.... I will not draw any conclusions -- this is the task of the commission. I only know that the seamen acted according to their conscience. When the superstructure was ablaze, it was necessary to remove the fire-fighting equipment, which could explode at any moment from the direction-finder platform. Passenger assistant A. Filippov and fourth navigator S. Timoshevskiy climbed the scorched ladder, broke the lock from the box, placed the rockets in a bag and carried them to the stern.

"A. Antidze carried out the order: 'Nine girls to the raft. You will answer for them with your head'. The Primorye dry-cargo carrier, from which those rescued had been transferred to the Antonina Nezhdanova, picked up the raft in the open seas. The son of the famous captain, Antidze junior, however, did not leave with them but sat on the tug boat and went again to the Turkmeniya to help his comrades. He boarded the burning vessel, put out the fire, brought the mooring lines.... I. Matusevich, the son of Captain G. Matusevich, burned his eyes and sprained his ankle; however, he refused to go to the infirmary. What kind of instructions are these! The women passenger attendants sat in the boats in the icy rain in their dresses because they had given their jackets to the young children.

I am not idealizing the actions of the seamen from the Turkmeniya. There were also those who displayed cowardness. However, they were few. Those who did not think about their own lives were the overwhelming majority.

Any critical situation becomes an indicator of character and a test of one's humanity and reserve of strength. The crew has such a reserve. But the vessel? It was necessary to hear opinions like the following: Is it worthwhile to write about this? Will we not undermine authority? The equipment let us down. In the final analysis, it let us down. After 25 years, the Turkmeniya is obsolete -- if not physically, then morally. New passenger vessels, which are equipped with very modern fire-fighting systems and which are constructed from the latest fireproof materials, have not arrived in the Far East for a long time. Along with the fleet, the position that everything goes for the periphery has become obsolete. This is where new, competent and sound instructions are required.

MARITIME AND RIVER FLEETS

EDITORIAL CALLS FOR REDUCED MARITIME FLEET ACCIDENT RATE

Moscow VODNIY TRANSPORT in Russian 13 Nov 86 p 1

[Editorial: "Against Accidents -- A Battle!"]

[Text] The maritime fleet is being continually replenished with modern specialized vessels that are equipped with the latest word in instruments and systems which are capable of insuring safe navigation under any sailing conditions. However paradoxical it is, modern equipment does not lessen at all the danger of an accident occurring. Moreover, no substantial decrease in the number of accidents has been observed during recent years in the Ministry of the Maritime Fleet despite the fact that a number of seaports have been equipped with automated systems for controlling the movement of vessels. A justified question arises -- why? Where do the serious shortcomings and omissions, which lower the efficiency of the struggle against accidents, originate?

The results of inspections of maritime shipping companies show that not all directors, engineer and technical workers and the command personnel of vessels perform the proper work to prevent accidents, and they do not always display high exactingness on themselves and subordinates with respect to the strict fulfillment of norm requirements. Many tragedies, especially the bitter one involving the Admiral Nakhimov steamship and the Petr Vasyev bulk carrier, testify to what this leads. As is known, the CPSU Central Committee Politburo drew conclusions from this accident and outlined ways to prevent similar happenings. Those guilty of what occurred were severely punished. The question, however, is so serious that it requires the adoption of urgent measures not only of a disciplinary nature but also of an organizational, technical, economic and indoctrinational one. The situation with accidents in the Black Sea, Georgian, Primorye, Novorossiysk, Baltic, and Northern shipping companies evokes special alarm. It is typical that it has not been substantially reduced during the last five years, for example, in the Georgian and Novorossiysk shipping companies. In 1984, the relative accident rate in these shipping companies grew twofold when compared with the previous year and reached 16.3 and 8 percent, respectively.

In the Baltic Shipping Company, the number of accidents during this same period, which occurred because of the fault of crews, reached 19. Not only

violations of the International Rules for Preventing Collisions but also shortcomings in the technical operation of the vessels and the unreliability of individual types of equipment on the new vessels were the causes for the collision of vessels -- and the Akademik Shukhov, Vasya Alekseyev and Komsomolets Tadzhikistana committed them. There have been cases of going aground on shoals because of violations of navigation principles, for example, in the Novorossiysk Shipping Company. Crews on the Dzerzhinsk, Kapitan Fomin, Sergey Lemeshev, and Kapitan Petrushkov motor vessels have done this. The navigation safety services, unfortunately, have still not become centers for coordinating the efforts of the shipping companies' subunits in carrying out norm requirements, Ministry of the Maritime Fleet measures and their own decisions on preventing accidents. A thorough analysis of them with a determination of the primary reasons is not being conducted everywhere, and violations of the prescribed procedures for classifying and accounting for accidents, especially in the ship equipment services, are being tolerated. It is from here, from the services, that it is necessary to wage a resolute struggle against the elimination of violations of the regulation requirements in the fleet.

Mentor captains and mentor engineers, very frequently do not display the necessary exactingness toward the command personnel of vessels for the timely elimination of shortcomings and omissions. There are still quite a few responsible persons who regard violations of the rules and statutes on the safe operation of the fleet in a familiar and tolerant manner ("Perhaps it will go by") and pay insufficient attention to questions concerning the organization of the watch and navigation services and to the effective development of measures for struggling for the survivability of the vessel. At times, they forget to check how fire and explosion safety requirements are being observed on the vessels and how the provisions in the international conventions, in which the USSR is a participant, are being carried out; and they often provide an objective evaluation of the crew's capability to orient themselves correctly under difficult sailing conditions. Finally, it is time to understand that a low level of exactingness, laxity and the absence of vigilance will sooner or later lead to the death of people.

As a rule, public mentor captain and mentor engineer groups are being formed in the shipping companies and they must function. This is a large force, which is capable of doing a great deal. As an analysis of the actual state of affairs shows, however, these groups are not being used very effectively in the shipping companies or they are not functioning at all. The summing up and dissemination of the progressive experiences accumulated from many years of accident-free work by the best captains and chief engineers must be an iron rule for them! Do we really have few of them in the fleet? There is something to be learned from them. It is only necessary to organize this work in each subunit of the branch -- and then it will be possible to expect a decrease in the level of the accident rate.

A great deal in the shipping companies depends on the "upper echelon" of managers. It is they who have been given large rights in setting order and discipline aright. But what happens in real life? Very many shipping

company chiefs and their deputies are not able to organize an effective inspection of the way ministry orders, Ministry of the Maritime Fleet collegium decisions, ministry instructional letters, rules, statutes, their own decisions, and the integrated plans for measures to prevent accidents are being carried out in the services, departments and other subunits. Today, the question must be put point-blank -- establish very strict control over the carrying out of all directives that are capable of preventing accidents. Such control is still not being felt in the Black Sea, Georgian, Novorossiysk, Baltic, Primorye, and other shipping companies.

Without a doubt, the main figure on a vessel is the captain. Key personnel must demonstrate the maximum effort so that no mistakes are made in the selection of cadre for this position and, moreover, so that no formalism is tolerated in assignments to this position. Quite a bit is being done in this regard, but it is impossible to say that it is enough. At times, there is not an objective evaluation of the business and political qualities of command personnel being conducted everywhere. Sufficient attention is not being paid to instilling in them a sense of high responsibility for the entrusted task and to the formation of an irreproachable moral make-up, and the opinion of ship collectives about the business qualities of commanders is not always taken into consideration.

In the Black Sea, Northern, Novorossiysk, Sakhalin shipping companies and in a number of others, the work to strengthen labor, production and execution discipline -- the primary bases for a successful struggle against accidents -- is being performed poorly and, at times, unsatisfactorily. Drunkenness is not being eliminated sufficiently, persistently and purposefully; and political and indoctrinational work does not satisfy the assigned tasks too frequently. Every violation of labor discipline should receive a correct and timely evaluation in the ship's collective. The party, trade union and Komsomol organizations of both the crews and the shipping companies in general should provide a weighty and highly principled word on each specific case of a violation.

The problem of the accident rate in the fleet must be regarded with every severity. Working indefatigably, it is necessary to do everything to exclude collisions, going aground on shoals and fires from the life of crews. The Moreplavaniye, Mortehtsudoremprom and Morsvyazsputnik All-Union Associations, Glavflot, Glavkadry and the shipping companies must ensure the participation of specialists with the corresponding qualifications in the Ministry of the Maritime Fleet permanently working complex commission for inspecting the shipping companies in matters of ensuring the safe operation of the fleet. Only with combined efforts, high discipline and organization can the fleet really be put in order.

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